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New Power Plant Approved by Commission

Construction of New Consolidated Water Power and Paper Co. Hydro-Electric Station Formally Accepted—Total Cost Estimated At Over Two Million Dollars—Mills Raise Wages—Other News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., November 10, 1941—Formal approval was given by the Wisconsin Public Service Commission last week for the construction of the DuBay dam on the Wisconsin River near Knowlton, Wis., by the Consolidated Water Power Company, affiliate of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis. The project includes a hydro-electric plant and 22-mile transmission line, with total cost estimated at $2,122,761.

Construction work has already been started, having reached the point where a coffer dam is completed on the site of three of the eleven gates, and the location of the power house. The concrete footings will rest on solid granite, and at some points will be 30 feet below the river level. Work has been hampered by unusually heavy fall rains and consequent torrential flow of the stream. A 150-foot section of the coffer dam was carried away recently, but was recovered three miles downstream so the material could be salvaged.

To Flow More Than 6,900 Acres

The George W. Condon Company, Omaha, Nebr., has the contract for construction of an earth-fill dike to create the flowage of more than 6,900 acres, and will finish that portion of the work within about two weeks. The company is also building an earth fill to raise the level of two highways.

W. E. Thiele, chief engineer of Consolidated, announces that one 1,200-kilowatt and three 2,000-kilowatt generators will be installed in the new hydro-electric plant, and estimates the average yearly output will be 43,000,000 kilowatt-hours of energy. The dam is being built at a site where the river is 400 feet wide.

An expenditure of $186,864 will be made for the relocation and improvement of highways affected by the flowage and for the raising of bridges. The remaining cost of this work will be borne by the State of Wisconsin.

Other expenses will include: Land already held, $359,264.16; flowage, $47,575.95; land to be obtained, $36,756.73; riprapping and repairing of Eau Pleine reservoir, upstream from the DuBay dam, $25,485.17; clearing pond, $42,860; dam, gates, hoists and sills, $395,280; dike, $132,300; powerhouse and tailrace, $342,400; powerhouse equipment, $368,975; houses for employees, $25,000; transmission line, $160,000.

New Line to Connect at Biron, Wis.

The transmission line will connect the power plant with the Consolidated's power station at Biron, Wis. Five miles out of the total of 22 have been completed and are tied in with the Wisconsin Public Service Corporation's lines to furnish temporary power at the dam site.

Permission has been sought from the Wisconsin Public Service Commission by the Wisconsin Valley Improvement Company to raise the elevation of the dam at the Big Eau Pleine Reservoir, which is a water storage for the Wisconsin River, upstream from the Consolidated's project. The change would necessitate a partial reconstruction of the dam, gates, dykes and gate control work. The company has informed the commission it owns all lands that would be affected. A public hearing is to be held by the commission in Madison November 21.

Paper Mills Increase Wages

Wage increases of three cents per hour have been granted employees of both the Consolidated Water Power and Paper Company and the Ahdawagam Paper Products Company, Wisconsin Rapids, Wis., effective November 9. The new schedules were announced following negotiations between the unions and the managements.

Consolidated's increase apply to its four mills at Wisconsin Rapids, Biron, Stevens Point and Appleton, Wis. Under the new schedule, the base rate of pay is set at 66 cents per hour, with a starting rate of 58 cents. The base rate was advanced from 58 to 63 cents per hour last May 1.

Ahdawagam's base rate is now 66 cents per hour for men, and 53 cents for women. Differential wages

(Continued on page 24)

Labor Shortage Increases in Lumber Camps

Prime Minister of Canada Announces That Forest Workers Leaving For United States Creates Serious Situation In Woods — Swedish Chemical Pulp Mills Increase Production of Sulphite Spirit.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., November 10, 1941—The Federal Government has under consideration steps to check migration of young men engaged in the forests industry from Canada. The Prime Minister has made this announcement in reply to complaints in the House of Commons that 2,000 lumbermen had left for the United States in the past week, and that the total may now have reached 7,000. Admittedly a serious labor shortage has occurred in Eastern Canadian lumber camps. In this connection the Chronicle-Telegraph, of Quebec, in a spirited editorial on the subject, claims there has been laxity in this matter on the part of both provincial and federal authorities. It argues that no person should be allowed to leave the Dominion who is fit for military service or is required in vital Canadian industries, "otherwise there is nothing to stop our badly-needed man-power from being drained away to the United States." In endorsing this stand, the Montreal Gazette says: "To stop the exodus now will not undo the damage already inflicted. If this kind of thing is taking place along three thousand miles of border it is not much wonder that the men needed for the Canadian army and for Canadian industry are not being found. There is an official responsibility somewhere. It should be identified and an explanation exacted, although it is inconceivable that any explanation can justify the inaction of which some department has been guilty."

New Products of Sulphite and Kraft Mills

A bulletin just received here from Stockholm gives a comprehensive review of the manner in which the Swedish pulp and paper industry has developed new products, consequent on overseas markets being cut off by the war. Owing to the fact that Sweden has no coal deposits of any importance and no oil, research-workers and technicians have devoted great attention to supplying fuel from the forests. Production of producer-gas from wood has been one solution. Whereas at the outbreak of the war there were but a few hundred vehicles driven by producer-gas, today there are over 65,000 automobiles, operated on charcoal or wood, running on Swedish roads, handling all the necessary motor transports. Producer-gas is also used as a fuel for agricultural tractors, motor vessels and stationary plants. Charcoal has also been developed for use in the steel industry, charcoal being produced by new and speedier charring methods by means of improved retort furnaces, in which tar and other by-products can be more completely recovered. The tar can be used as motor fuel and also converted and refined into certain qualities of lubricating oil and other valuable products.

Sulphite Spirit Production Increases

The capacity of the existing sulphite spirit factories operated by Swedish chemical pulp mills has also been increased with the aim of making possible a larger production of this kind of motor fuel, and agreements have been concluded for the building of plants at other mills. The output of spirit is, however, dependent upon the production of sulphite pulp, which at present owing to the shipping blockade is only a fraction of the normal. Its place is to some extent taken by the production of pulp for cattle food, of which the Swedish emergency authorities have ordered about 200,000 tons for delivery this winter. By production of such fodder-cellulose, a larger quantity of spirit is obtained. Every ton of fodder-cellulose yields 140 litres of spirit, as compared with about 30 litres per ton of strong sulphite and 100 litres per ton of "viscose," or silk pulp. Other methods for the production of spirit have also been developed. Apart from the use of spirit for motor fuel, it forms the base for the manufacture of a number of chemical products such as lacquer solvents, acetic acid, etc.

Rosin a Large By-Product

The sulphate or kraft pulp mills recover as their principal by-product liquid rosin. In the distillation of this product are obtained rosin, useable inter alia for sizing paper, and so-called tall-oil, which is used instead of soyabean oil in soap manufacture. The production of kraft pulp is, however, also very small at present owing to the war. In connection with the pulp mills it can be mentioned that the paper mills have taken up the manufacture of many new articles of paper, which are used as substitutes for many products of which there at present is a scarcity in Sweden.

Another field, where the forest has become of utmost importance is in the textile industry, which from chemical pulp obtains the raw material for the manufacture of cell-wool and acetate silk. Sweden has at present two factories for the production of such spinning material, and the erection of a third one has recently been decided upon, whereby its production capacity of cell-wool and artificial silk will reach 15,000 tons a year.

It is added that probably the most urgent task of the Swedish forests at the moment is to replace to a very large extent coal and coke as fuel in industry and for the heating of dwelling houses. It is estimated that about 40 million cubic metres of wood fuel and additional quantities of peat are required for the period July 1941-June 1942, and for the lumbering and transportation of this enormous quantity, a nation-wide scheme, employing thousands of hands, has been organized by the Swedish authorities.

Will Open New First-Aid Department

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., November 10, 1941—A new first aid department is being established at the Appleton Coated Paper Company, Appleton, Wis. The company is building an addition 20 by 16 feet to its offices for this purpose at an estimated cost of $1,500. A full-time nurse has been engaged to take charge of the department.

Paper Demand Continues to Rise in Midwest

Allotment Policy In Force As Paper Merchants Strive To Meet Mounting Orders For Many Lines—Current Scarcity In Wrapping And Bag Grades Reported—To End State Sales Tax—Other News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., November 10, 1941—With production running at record figures the Chicago paper outlets still report the impossibility of meeting local demand. Of genuine worry to the paper industry is the job of endeavoring to absorb heavy increases in operating costs without a price increase that might be considered as "out of range." Local executives who are meeting with government representatives on these matters report a most encouraging understanding on the part of these government men as far as the industry and its problems are concerned.

Chicago jobbers and sales representatives are continuing to follow the allotment policy and finding it much more difficult to satisfy the demands of customers than to sell paper in the most exacting buyers markets. In fact more than one paper executive interviewed has expressed the fear that "we'll forget all we know about the sale of paper unless we are careful!"

Increased strength is shown in wrappings and bags as the holiday season approaches and current shortages in specialties are becoming aggravated for the same reason. Sulphites remain very strong while books and covers have joined the rest of the markets in a major task of keeping orderly markets and fair prices to ward off criticism of unjustifiable price increases and to satisfy customers.

To End State Sales Tax

Effective November 1, all paper concerns in Illinois who sell directly to agencies of the United States Government in this area will not be required to remit Retailers Occupation Taxes to the Department of Finance. The rule requiring the levying of the 2% State tax on such sales has been changed because the imposition of such a tax at the present time creates an undue burden upon the expeditious functioning of the Government. The State has announced that the urgency of the national defense effort and the necessity of expanding the Federal emergency program "now converts the Illinois tax into an unwarranted interference with the constitutional power of the Federal Government to arm and defend itself." The exemption not only includes the gross receipts from sales realized by persons selling to the Government but also the gross receipts from sales realized by persons selling to contractors operating under a cost-plus-a-fixed-fee contracts with the Government. The new ruling was hailed by Illinois concerns as a vital help in permitting them to bid on Government business in competition with those firms outside the State who have heretofore held a genuine advantage. The ruling is of definite interest to Illinois paper and paper products firms anxious to secure government business.

Cooperate in "War Against Waste"

Chicago and Illinois will cooperate in the "War Against Waste" day scheduled for November 12 when the Consumers Division under the direction of Miss Harriett Elliott will ask millions of consumers to sign pledges to do everything within their power to eliminate waste. The retail industry has utilized the "War Against Waste" theme not only in relation to special deliveries and special transportation costs but also with respect to the wrapping of packages. A genuine conservation effort will be featured as far as Christmas gift wrapping is concerned. Meanwhile, the Conservation Committee of the Waste Paper Consuming Industry reports surprising results in its campaign. W. H. Beckwith of the Morris Paper Mills of Morris, Illinois, is chairman of this important committee while the other Illinois member of the committee, G. G. Otto of the Alton Box Board Company is spending a great deal of time in cooperation to prevent any acute waste paper shortages. Offices of the Committee are at 80 E. Jackson in Chicago.

Eagle-A Elects New Officers

William S. Murphy of the Lakeside Central Company and A. L. Rutherford of the Whitaker Paper Company are two newly elected Chicago officials of the midwest division of the Eagle-A Announcement Association. Mr. Rutherford was chosen as vice president and Mr. Murphy as secretary at a recent meeting held in Chicago at which J. H. Sweet, sales manager of the American Writing Paper Corporation outlined methods of meeting present day marketing conditions.

Traffic Men to Discuss Problems

Heads of industrial traffic departments who control a majority of the country's freight tonnage will meet in Chicago on November 13 and 14 to discuss transportation problems arising under the national defense program. The meetings will be held at the Palmer House as a part of the annual convention of the National Industrial Traffic League. C. E. Childs, a member of the Federal Board of Transportation Investigation and Research, created under the Transportation Act of 1940, will speak at the business session. J. E. Bryan, Chicago, general traffic manager of the Wisconsin Paper and Pulp Manufacturers Traffic Association, is president of the league. Quite a number of traffic managers of paper manufacturing and distributing concerns are expected to be present.

New P. & T. Club Member

The Paper and Twine Club has announced that K. W. Kennedy of the Gummed Products Company of Chicago has been secured as a new member of the rapidly growing organization.

New Hancett Officers Elected

C. M. Croeger, former vice president and secretary of the Hanchett Paper Company, well known Chicago coarse paper and supply firm, has recently resigned from the company and Maurice Peck has been elected vice president. Edward Schwartz was elected a director and will assume the secretarial duties formerly handled by Mr. Croeger.

Government Paper Bids and Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 12, 1941—The Government Printing Office has received the following bids for 20,000 sheets of 15 x 21 parchment paper; Crane & Company, $45.31 per M sheets; Barton, Duer & Koch Paper Company, $27.01; and R. P. Andrews Paper Company, $45.31.

For 54,000 pounds of 24½ x 34 lined box board; Mudge Paper Company, 3.187 cents; Virginia Paper Company, 3.28 cents; Resolute Paper Products Corp., 3.406 cents; Old Dominion Paper Company, 3.197 cents; R. P. Andrews Paper Company, 3.19 cents; Barton, Duer & Koch Paper Company, 3.1875 cents; and Enterprise Paper Company, 3.282 cents less 1%.

Paper Awards

Barton, Duer & Koch Paper Company will furnish the Government Printing Office with 50,000 pounds of 25% rag, 28 x 34 white bond paper at 13.20 cents bids for which were received on October 27.

Other awards made for which bids opened on the same date include; R. P. Andrews Paper Company will furnish 70,000 pounds of 25% rag, 24 x 38 white bond paper at 13.6 cents; Mudge Paper Company, 40,000 pounds of 50% rag, 21 x 32 white bond paper at 15.90 cents and R. P. Andrews Paper Company, 44,000 pounds same at 16 cents; Barton, Duer & Koch Paper Company, 5,575 pounds of 50% rag, 18½ x 40¼ cherry ledger paper at 18.75 cents and the same firm 39,800 pounds of 50% rag, 21 x 32½ pink index single ply at 18.25 cents. Mudge Paper Company will furnish 13,000 pounds of 50% rag, 20 x 25 blue antique cover paper at 11.25 cents; R. P. Andrews Paper Company will furnish 28,700 pounds of 32 x 42 salmon sulphite writing paper at 8.09 cents and 12,385 pounds of 32 x 42 yellow sulphite writing paper at 10.55 cents. Paper Corp. of U. S. will furnish 9,750 pounds of 21 x 32 green sulphite manifold paper at 14 cents and the same firm will also furnish 16,000 pounds of 22 x 34 yellow sulphite writing paper at 8.09 cents. Bids for all of these items were received on October 27.

Barton, Duer & Koch Paper Company will furnish 15,000 sheets of 22 x 28 gray photo mount board at $43.45 per M sheets. Mudge Paper Company will furnish 17.867 pounds of 38 x 48 jute tagboard at 11.5 cents. Whitaker Paper Company will furnish 1,539 white and colored 22 x 34 sulphite bond paper at 10.53 cents for white and 11.51 cents for colored. Bids for these items were received on October 24.

R. P. Andrews Paper Company will furnish 80,000 pounds of 25% rag, white bond paper in 34 inch rolls at 13.55 cents and Walker, Goulard, Plehn Company will furnish 12,663 pounds of 50% rag, 32 x 42 white ledger paper at 17.80 cents. Bids for these items were received on October 22.

Walker, Goulard, Plehn Company will furnish 80,000 pounds of 25% rag, 21 x 32 white bond paper at 14.9 cents; the same firm will also furnish 40,000 pounds of 25% rag, white bond paper in 32 inch rolls at 13.5 cents and also 8,150 pounds of 25% rag, 28 x 34 salmon bond paper at a total of $1,299.93. Paper Corporation of U. S. will furnish 40,750 pounds of 28 x 34 yellow sulphite writing paper at 12 cents: also 28,700 pounds of 32 x 42 green sulphite writing paper at 12 cents and the same firm will also furnish 222,666 pounds of 39⅜ x 52½ buff sulphite writing paper at 10.92 cents. Paper Corp. of U. S. will also furnish 9,750 pounds of 21 x 32 blue sulphite manifold paper at 14.5 cents and also 65,000 pounds of 32 x 42 yellow sulphite manifold paper at 14.5 cents. Russell Products company will furnish 1,200 pounds of facing stereo tissue paper in 24 inch rolls at 99 cents. Mudge Paper Company will furnish 14,122 pounds of 38 x 48 dull coated book paper at 11.4 cents. The same firm will also furnish 19,425 pounds of 50% rag, 21 x 32 green ledger paper at 17.75 cents. Walker, Goulard, Plehn Company will furnish 8,150 pounds of 25% rag, 28 x 34 green bond paper at 15.95 cents less 2%; and R. P. Andrews Paper Company will furnish 12,800 pounds of 25% rags, 22 x 34 pink bond paper at 14.65 cents. Barton, Duer & Koch Paper Company will furnish 306,500 pounds of machine coated book paper in 50 inch rolls at 6.43 cents. Bids for all of these items were received on October 20.

Barton, Duer & Koch Paper Company will furnish 59,156 pounds of 35 x 50 white plate finish cover paper at 12.5 cents, bids for which were received on October 17.

Paper Corporation of U. S. will furnish 9,750 pounds of 21 x 32 green sulphite manifold paper at 14 cents, bids for which were received on October 15.

Mudge Paper Company will furnish 100,000 pounds of buff bristol board in 24 inch rolls at 5.59 cents, bids for which were received on October 13.

Recent Customs Decisions

A case involving the dutiability of green, pink, and peach newsprint in sheets 22 x 34 inches is before the United States Customs Court at Detroit, according to the Import Committee of the American Paper Industry, on protest by a Chicago jobbing house against its classification for duty. The importer must prove, what has not been shown in previous cases, that such paper was chiefly used by newspapers prior to 1930. The paper is in sizes which can be cut to the usual 8½ x 11 inch sheet used for typewriter carbon copies.

The dutiability of paper of standard newsprint quality, but over 4 points in thickness, will come befort the United Customs Court for the first time in two cases docketed for trial at Mobile. The paper, imported from Newfoundland, was all over 4 points in thickness, even after tolerance was allowed for possible increase of thickness due to absorption of moisture. All of the paper is in sheets. Hitherto importers have made no attempt to overturn that portion of the definition of standard newsprint which limits thickness of standard newsprint to 4 points, plus 5 per cent tolerance for the outer layers of rolls. Under this provision of the definition such paper as novel news has hitherto been imported as dutiable printing paper without protest by importers.

At Los Angeles a shipment of duplex asphalted kraft paper, entered by the importer as sheathing paper at 10 per cent, has been classified for duty as paper not specially provided for at 30 per cent.

Big New Deal for Pulp Plant Approved

Brompton Co.'s Purchase and Operation of Large Mill of Lake Sulphite Pulp Co., Ltd., Never Completed and Now In Liquidation, Is Authorized By Shareholders In Spite of Strong Opposition.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., November 11, 1941—At a special meeting here yesterday of the preferred and common shareholders of the St. Lawrence Corporation, Limited (which holds nearly all of the Brompton Pulp and Paper Company's common stock), and of shareholders of the Brompton Company, approval was given to the proposed acquisition by the Brompton Company of the properties and assets of the Lake Sulphite Pulp Company, Limited, of Red Rock, in the Thunder Bay District of Ontario, whose large sulphite plant, with a capacity of 540,000 lbs. per 24 hours, has never been in operation and is now in liquidation. Many prominent shareholders registered disapproval of the deal, but the vote carried by some 250,072 preferred and common shares at the St. Lawrence Corporation meeting against 69,340 shares against the deal.

Proposal Attacked on Many Grounds

The proposal was attacked on many grounds; it was contended that the Brompton Company should not at this time mortgage its assets for a venture which will not be earning-producing for about 1 or 1½ years, by which time the war may be over and the company be faced with depressed conditions and have to compete with dumping of Scandinavian pulp, that insufficient time had been given shareholders to study the merits of the proposed deal, that, in any case, directors had not given shareholders sufficient information to enable them to make up their minds, that should the deal go through the net effect would be to jeopardize the chances of maintenance of current dividends on the St. Lawrence A preferred stock, to say nothing of liquidation of arrears of dividends, now amounting to $16.25 a share, that it was unwise for the Brompton Company, which undoubtedly could, if it felt it necessary to round out its operations and provide for the future, find many suitable locations in this province instead of going about 800 miles to the upper part of Ontario, and, in general, that the directors had not made a good case for the proposed deal. In reply to a question, it was stated that no director of either the Brompton Company or the St. Lawrence Corporation has visited the property which it is proposed to acquire.

A. F. White Supports Proposal

In support of the proposal, Arthur F. White, chairman of St. Lawrence Corporation and president of Brompton, declared that the proposed acquisition will help materially in achieving the aim of placing Brompton in the best possible competitive position to meet post-war conditions, that all of the essential items, such as priorities, special depreciation allowances, power contract, etc., have been satisfactorily arranged, that, contrary to what might be generally supposed, this deal will not result in a great expansion within the industry, that financing has been satisfactorily arranged so as not to impair the company's working capital position and that ample liquid assets will be available for the enlarged operation. Mr. White declared, in the course of discussion at both meetings, that he believed that the deal would be in the best interests of the shareholders of St. Lawrence Corporation and Brompton Pulp and Paper Company. He said the Lake Sulphite properties, together with the plant it is proposed to install, will form an integral part of the Brompton Company's normal operations, and all of the estimates and plans have been based on peacetime conditions from a long term view-point. This material has been prepared by the operating officials of the company thoroughly familiar with the business, and who have studied the new properties on the spot. In the early stages, and certainly for the duration of the war, the plant will be operated as a sulphate pulp mill. This will constitute a valuable contribution to the war effort, and is earnestly desired by the Ottawa authorities. Later on, further changes will be effected to bring the operation in line with normal business requirements of the company.

Newfoundland Ships to U. S.

WASHINGTON, D. C., November 12, 1941—The United States is largely replacing Britain as the chief outlet for Newfoundland newsprint, reports to the Department of Commerce indicate.

Although normally Newfoundland marketed the bulk of its output of newsprint in the United Kingdom, there has been a shift in recent months in the main current of this trade to the United States instead.

In the first five months of this year Newfoundland shipped 82,197 tons to the United States, approximately one-third more than for the same period of 1940. In the same five months of this year, Newfoundland shipments of newsprint to Great Britain decreased by 50 percent compared with the preceding year. The change is said to be very advantageous to Newfoundland shippers, as it enables them to obtain United States currency, which is at a premium in Newfoundland.

Suit Filed by Hoberg Mills

APPLETON, Wis., November 10, 1941—Suit has been filed by Hoberg Paper Mills, Green Bay, Wis., against the Evergreen Paper and Supply Company, Port Chester, N. Y., asking judgment for wrongful use of the trade-name "Evergreen."

The Hoberg company contends it has used this name on its toilet tissue and paper towels for many years, that it has spent large sums in advertising, and values the good-will attaching to it at $100,000.

The Evergreen company recently has gone into the converting business and is using "Evergreen" as a trade-name, the Hoberg company alleges. An injunction to restrain use of that name, and an accounting to determine the amount of damages is sought.

The suit is being brought in the United States District Court in New York. No answer has been filed as yet by the Evergreen Paper and Supply Company.

Empire State TAPPI Meets at Syracuse

The Empire State Section of the Technical Association of the Pulp and Paper Industry met at the New York State College of Forestry, Syracuse, N. Y. on Saturday, November 8. H. D. Cook of Sweet Brothers Paper Manufacturing Company presided as chairman.

Availability of Strategic Materials

The afternoon session was directed by Vance P. Edwardes of the International Paper Company and dealt with the subject of availability of strategic materials.

E. A. Georgi of the Hercules Powder Company, Wilmington, Del. talked on rosin size. At present there appears to be plenty of rosin available for the coming year. There will be a small increase in rosin production even though the Government has a stock of 1,250,000 barrels on hand. If a shortage in alkali should come, it will be possible to effect a 25 per cent saving by using higher grade rosin. The I. C. C. will now permit steel drums to be reused to save steel.

M. W. Phelps of the Solvay Process Company, Syracuse, N. Y. gave statistics on the 1939 distribution of caustic soda. In 1941 the amount used was greater. The paper industry used 4.8 per cent of the caustic soda made. By the end of 1942 there will be a considerable increase in the production of soda ash in the South which will possibly relieve the shortage. It is expected that because of the shortage, chlorine will shortly be allocated to users by the OPM.

H. J. Heffernan of the Merrimac Division of the Monsanto Chemical Company, New York, N. Y. discussed alum. This product is plentiful at present. Salt cake is still coming in from Canada and England. The rayon industry is recovering salt cake and is making up for the loss in imports from Europe. It is likely that priorities will give way to allocation in 1942.

Smith Mac Landress of the Appleton Wire Works, Appleton, Wis. discussed copper. There is a real shortage in this product, due largely to shipments to South America. The marginal copper mines will probably soon be in production, working under a Government subsidy. It is expected that the 60 day limitation of inventories, based on product value, will shortly be strictly enforced. The paper industry normally used about 2000 tons of copper out of the 220,000 tons produced.

J. P. Strasser of the Stein, Hall Manufacturing Company, Chicago, Ill. discussed starches. There appears to be plenty available, including corn and tapioca. The chlorinated type are scarce due to the chlorine shortage but substitutes have been developed to replace chlorinated starches. Starch is finding increasing use as a substitute for casein. One company that formerly shipped one car a month for this purpose is now shipping 18 cars a week.

There appears to be plenty of clay available but the dye manufacturers are unable to predict the future availability of colors.

C. E. Foster of the Oswego Falls Corporation presented a paper on Pitch. In this he pointed out that it is the tacky pitch that gives trouble. There are other kinds that are less harmful. A number of ways of detecting pitch and some generally known preventives were mentioned. This paper was followed by an enthusiastic discussion.

C. W. Boyce Speaks

C. W. Boyce of the Office of Production Management, Washington, D. C. was the dinner speaker. He pointed out that the OPM exists to help industry do its job during the defense emergency period. An effort is being made to get greater production from the mills through increasing digester output, reduction of basis weight, increase of machine hours, etc. It is likely that the present priorities system will be replaced by an allocation system for many materials, but it is not likely that paper will get on the critical list. The demand for kraft paper and containers is tremendous. It will be necessary to develop more efficiency in the use of paper and board.

The next meeting will be held at the Woodruff Hotel, Watertown, N. Y. on January 10.

Those in Attendance

F. G. Barber, Lyman Beeman, Edward F. Boyle, Francis Boyle, John T. Clancy, C. Wells Clark, H. D. Cook, Harold Corbin, Joseph P. Early, Norman S. Eppell, E. Fladmark, C. E. Foster, George E. Fromm, E. G. Georgi, F. C. Goodwill, R. Goodwin, E. G. Ham, R. J. Harrer, H. J. Heffernan, W. O. Hisey, F. A. Hoar, Robert F. Huntley, J. W. Hurley, E. C. Jahn, A. D. Kolumban, A. B. Leachy, C. E. Libby, R. G. Macdonald, Milton J. Maguire, R. T. Mann, D. C. Mather, Smith McLandress, H. L. Nellen, Richard J. Mortaugh, F. W. O'Neil, H. Perry, M. W. Phelps, C. H. Plantz, Harold T. Randler, H. M. Rice, John Schuber, Robert K. Stamm, J. P. Strasser, Henry J. Trolin, R. F. Vokes, and Frank Zeitlin.

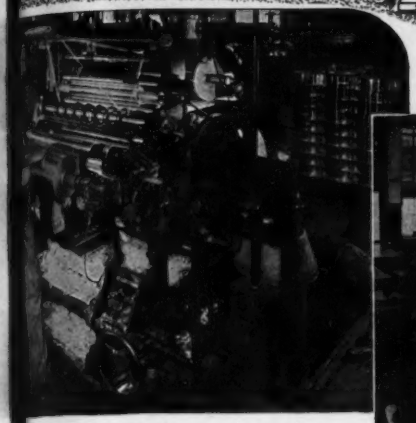
Paper Mills Combat Stream Pollution

DARLINGTON, S. C., November 10, 1941—Special: Representatives of the Black Creek Protective association were advised recently in conference with representatives of the industries in Hartsville that a definite movement was initiated during the past summer by the Hartsville mills to abate pollution in the waters of Black Creek in Darlington county in the future. The Sonoco Products company, Carolina Fiber company, and the Hartsville Print and Dye Works then employed C. M. Baker, a consulting engineer from Madison Wis., who has had a wide experience in the utilization and disposal of industrial wastes, to develop methods for the prevention of objectionable pollution of Black Creek.

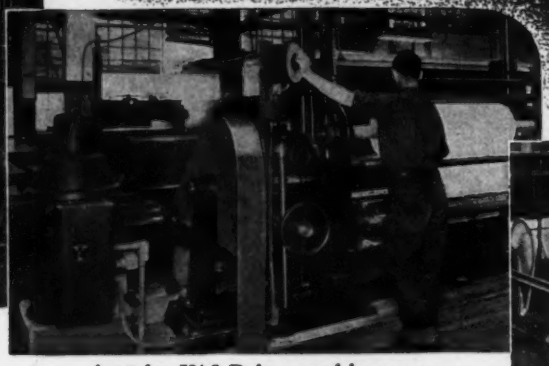
Methods have therefore been provided for measuring the quantities of the various classes of wastes from the different mills and samples are now being collected and analyzed chemically to determine the character and the pollutional significance. Analyses have been completed of the wastes from the various Hartsville mills and at the present time samples of the creek waters are being collected from six different points above Hartsville to below the city of Darlington, to be analyzed.

Several months will be required to complete this work.

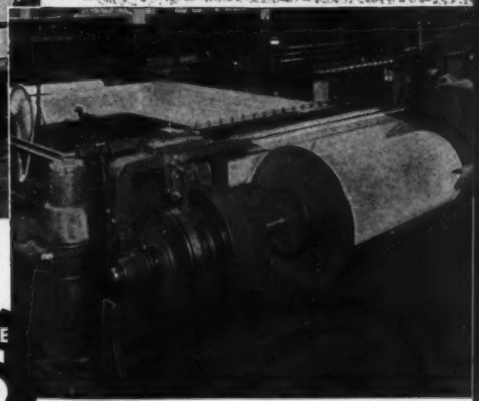
CONTROLLED ACCELERATION . . . A Production AID!



Here's a real test of smooth acceleration. Aluminum foil tears so easily in winding under tension that it must be brought from a low threading speed to the top operating speed smoothly. It's done with the Reliance V★S Drive. Fewer breaks mean more production.



A 15 hp. V★S Drive on this paper winder provides speeds for winding paper from 25 to 2150 feet per minute.



This rayon slasher with Reliance V★S Drive has an operating range of 2½ to 62½ yards per minute.

RELIANCE V★S DRIVE

CCELERATION TO FIT THE WORK

Two types of acceleration are possible with the V★S Drive. With one, the handle of the speed adjuster is returned to zero-speed position. The iven machine can then be accelerated to the desired speed any rate, limited only by the velocity of rotation of the eed adjuster handle. The amount of torque developed simply that required to accelerate the load smoothly.

With the second type of acceleration the motor comes up to a pre-set speed automatically when the "start" button is pressed. The inherent aracteristics of the V★S Drive are such that the rque provides smooth acceleration and does not subject e driven equipment or the material being processed undue shock or strain.

her features which help boost production are: a wide ge of operating speeds, quick stopping, reversing, e speeds for threading and inching, convenient control.

Get Bulletin 310 for details.

LIANCE ELECTRIC & ENGINEERING COMPANY
1 Ivanhoe Road • • • Cleveland, Ohio

AN ALL-ELECTRIC ADJUSTABLE-SPEED DRIVE FOR A-C. CIRCUITS

Speed Ranges up to 16 to 1—Sizes 1 to 30 hp.

RELIANCE A-C D-C MOTORS

BIRMINGHAM • BOSTON • BUFFALO • CHICAGO • CINCINNATI
DETROIT • GREENVILLE (S. CAROLINA) • HOUSTON (TEXAS)
LOS ANGELES • MINNEAPOLIS • NEW YORK • PHILADELPHIA
PITTSBURGH • PORTLAND (ORE.) • ST. LOUIS • SAN FRANCISCO
SYRACUSE (NEW YORK), AND OTHER PRINCIPAL CITIES

F. B. Wells Goes with Western Board

KALAMAZOO, Mich.—Fred B. Wells, veteran Orrville, Ohio, paper maker and mill superintendent, has been named general superintendent of the new Western Board and Paper Company Kalamazoo mill, Leon and William Slavin, owners of the mill, announced today.

Widely known in paper-making circles, Mr. Wells already has assumed his new duties here. At present he is directing a large crew of mill-wrights in rehabilitating the Western Board mill on King highway, preparatory to the beginning of board production early in 1942. The mill, inactive most of the time for nearly a decade, was purchased several weeks ago by the Slavin brothers, Kalamazoo paper stock dealers.

Mr. Wells has been in the paper-making industry since he was 14, having started as a laborer at a wrapping paper mill in Penn Yan, N. Y. He stayed at the Penn Yan mill until he was 21, and then came west to Ypsilanti, where he worked one year.

He went back to New York state as a machine tender in a Fulton mill, and again came west to work in a Steubenville, Ohio, paper factory. He later was employed at mills in West Virginia and New York, and 31 years ago went with the Ohio Box Board Company at Rittman, Ohio, first as a tender and later as a tower boss. After several years he became mill superintendent, and remained in that capacity 24 years.

He left Ohio Box Board two years ago, and since has been engaged in building and starting paper mills, while making his home in Orrville. Western Board is his third such job.

Mr. Wells is married and has one son, Arnold Wells, 24. The son is coming to Kalamazoo next week to work under his father in the Kalamazoo factory.

The new superintendent, who directed the growth of Ohio Box Board Company from a small mill to a four-machine plant turning out 450 tons of board daily, revealed two millwright shifts are being employed here in an effort to get production underway by the first of January.

All machinery abandoned nearly 10 years ago, when the original Western Board and Paper Company suspended operations, is being rehabilitated, and thousands of dollars worth of new machinery purchased several years ago by the Detroit Paper Products Company, and delivered but never uncrated, is being set up.

Company officials said they had encountered no difficulties in obtaining materials, as most of the machinery required to start board manufacture has been lying idle in the plant. Detroit Paper Products never operated the mill, after buying it about seven years ago.

The factory has one large paper machine, and that is being rebuilt under the supervision of its Wisconsin manufacturers. Western Board anticipates an ultimate peak production of approximately 140 tons of board daily.

Great Northern Nets $1.88

The Great Northern Paper Company and wholly owned subsidiaries for the nine months to September 30, reports a net profit after $1,060,000 provision for Federal income and excess profits taxes of $1,878,136, equal to $1.88 each on 997,480 shares of capital stock. Net profit for period last year was $2,118,084 or $2.12 a share.

Reforestation in British Columbia

Reforestation by the B. C. Forest branch has been attempted by broadcast seeding, spot seeding, planting and other devices, it having been determined that planting of nursery stock proves the surest and cheapest method of meeting the situation.

While the program for 1941-42 season will not reach a peak until February on the coast, it is possible now to form some forecast of the plans to be carried out on Vancouver Island, chief section of forest wealth in British Columbia. Acreage estimate is somewhat difficult to obtain, increasing as arrangements can be made to take over lands for the purpose. The Mayo Singh Company, for instance is expected to turn over lands at Timberlands which will provide an additional acreage at that point.

Actually the plan is to plant if possible between 10 and 12 million trees per year, the seedlings being raised at the nurseries at Green Timbers and Quinsan. The plan is to estimate from 800 to 100 trees per acre for planting.

There is a project, the branch reports, near Skutz Falls, Cowichan Lake, where it is proposed to plant an area near Hill 60.

The Timberlands development, already large, will see considerable expansion if the plan suggested above should come to realization.

A project on the slopes of Mount Benson has been completed to date, but which it is hoped to extend later as areas become available.

A very large area in the vicinity of Bowser, in the old Dollar company operations, has been in operation and will likely be continued early next year.

At Quinsan there are large areas to replant, and much work has already been done in that vicinity, a crew being engaged all summer in the preliminary work of snag falling. It is in this area that the effects of the great 1938 fire show themselves, and being non-productive due to the killing off of the natural regeneration, action is considered desirabel as soon as possible.

This is in keeping with the policy to re-plant all unproductive areas possible and which are suitable for the purpose.

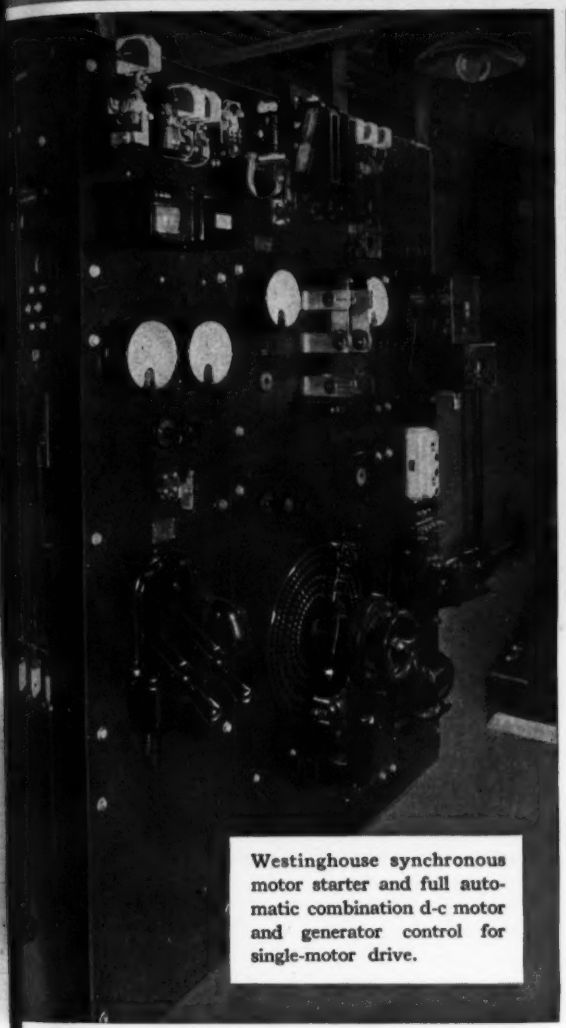
The two nurseries are producing stock two years old, delivered to the planting site at a cost of between ¼ and ⅓ cents per tree. They now have a production capacity and economy which probably, is not equalled in Canada, it is explained.

Mid-West Paper Sales Promotions

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., November 8, 1941—Following recent announcement by A. C. Hunt, president of the Mid-West Paper Sales Ltd., of the taking into partnership in the company of its branch managers, Mr. Hunt has now announced the appointment of G. A. Napper as sales manager of the coarse paper division of the company. Mr. Napper has, for a number of years, been manager of the Calgary, Alberta, branch of the firm and like the other branch managers recently became a partner.

Wm. M. Marshall, who has been with the Calgary branch for the past ten years, has now been appointed assistant manager in charge of this office, while Mr. Napper will move his headquarters to Winnipeg, Manitoba.



Westinghouse synchronous motor starter and full automatic combination d-c motor and generator control for single-motor drive.

Westinghouse main mill motor coupled into variable speed lineshaft.

Westinghouse single-motor paper machine drive steps up production

Equipped with Westinghouse single-motor drives, uniform speeds over a wide operating range are assured for lineshaft-driven paper machines. Maximum production is obtained . . . paper quality improved . . . and maintenance reduced.

In addition to the MG set and main motor, this drive incorporates full automatic control and a speed regulator with exclusive Westinghouse features.

Many mills throughout the country are using Westinghouse single-motor drives to speed up production, improve quality and cut costs. It will pay you to look to Westinghouse for an economical solution of your machine drive or other paper mill problems. A staff of experienced engineers is at your service.

WESTINGHOUSE ELECTRIC & MFG. COMPANY, EAST PITTSBURGH, PA.

LOOK TO WESTINGHOUSE FOR LATEST DEVELOPMENTS IN THIS EQUIPMENT:

MOTORS AND CONTROL
•
GENERATORS
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TURBINES
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SWITCHGEAR
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TRANSFORMERS
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LIGHTING
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INSTRUMENTS

Westinghouse J-94457

TIME-SAVER FOR THE PAPER INDUSTRY

Issues Order on Paper Board Prices

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 12, 1941—Effective date of Price Schedule No. 32, Paper Board Sold East of the Rocky Mountains, is changed to November 1, 1941 and the date for filing of initial "affirmations of compliance" is delayed until December 10, 1941 by an amendment announced today by Leon Henderson, Administrator of the Office of Price Administration.

As originally issued, the schedule became effective on October 1 and buyers, and sellers of paperboard were required to file affirmations of compliance by November 10 and monthly thereafter.

The postponement was decided upon because the schedule as originally issued failed to provide specific maximum prices for the so-called "specialty grades" of paperboard, although such were covered by the general provisions of the schedule.

Furthermore, a number of paperboard buyers have complained of hardship because their plants are located at points distant from sources of supply and until recently have depended upon water transportation to obtain their paperboard. The shortage of shipping has compelled many of these buyers, including some who are working on important defense orders, to change over to rail transportation, which is more expensive.

Prior to December 10, Mr. Henderson stated, Price Schedule No. 32 will be amended to deal with these matters. An additional appendix will be added establishing maximum prices for the highly specialized grades of paperboard used in a wide range of products and by many industries. Some of these specialty boards sell for hundreds of dollars a ton. The appendix will impose maximum prices in this field at levels that prevailed on a date prior to August 1, 1941.

No important changes will be made in the grades and ceiling prices now listed in the schedule, but some classifications and grades not listed previously will be added.

AMENDMENT OF PRICE SCHEDULE NO. 32—PAPERBOARD SOLD EAST OF THE ROCKY MOUNTAINS

Sections 1347.51, 1347.56, and 1347.60 are amended to read as follows:

Section 1347.51 *Maximum prices for paperboard.* On and after November 1, 1941, regardless of the terms of any contract of sale or purchase or other commitment, in the area East of the Rock Mountains, no person shall sell, offer to sell, deliver or transfer any grade of paperboard, and no person shall buy, offer to buy, or accept delivery of any grade of paperboard at prices higher than the maximum prices set forth in Appendices A and B hereof, incorporated herein as Sections 1347.61 and 1347.62 respectively.

Section 1347.56 *Affirmation of Compliance.* All persons who are required by Section 1347.54 to keep records, shall transmit, on or before December 10, 1941, and on or before the tenth day of each month thereafter, an affirmation of compliance on Form 132:1 containing a sworn statement that during the month for which the record is kept all purchases and sales were made at prices in compliance with this Schedule or with any exception or modification thereof. Copies of Form 132:1 can be procured from the Office of Price Administration or, provided no change is made in the style and content of it and that it is reproduced on 8" by 10½" paper, may be prepared by persons required to submit affirmations of compliance hereunder.

Section 1347.60 *Effective Date.* This Schedule shall become effective on November 1, 1941.

Canadian Government Uses More Paper

TORONTO, Ont., Nov. 10, 1941—Wartime business expansion, particularly in governmental departments, is having its effect on the fine papers market in this district. The enormous increase in the number of boards, departments and committees in connection with the war, added to the unusual commercial demand and the restrictions on imports, has started the trade wondering where all the fine paper is going to come from and how accumulating orders are to be filled.

The government, always a large user, lately has become an enormous consumer of papers in the book and writing division of the industry. Publicity campaigns for War Savings Certificates, War Loans, and other wartime activities have taken thousands of additional tons of poster paper, while newspaper circulations have been expanding under the avidity of the population for war news.

Hundreds of new industries have been established all across the Dominion as a result of the war and all these require stationery. Many more hundreds of the older plants have been extended and with the change over from peace-time to war-time work require new printing.

Domestic fine paper mills have been working hard to keep up with the demand, suddenly expanded in every direction, not only for their regular lines, but for certain specialties formerly imported. Added to this increased demand came priorities, which further complicated matters and sometimes gummed up production schedules. The war made it next to impossible to get orders filled from abroad and the need for conserving exchange interfered with imports from the United States. Users of imported papers had to switch to domestic lines.

Buy Paper Under Walsh-Healey Act

WASHINGTON, D. C., November 12, 1941—During the week ending October 25 the Government purchased $1,772,998.06 worth of paper under the Walsh-Healey act with the following orders:

$222,004 worth of paper, GPO from Frank Parsons Paper Company; $19,560 worth of paper GPO, from Virginia Paper Company; $25,925 worth of writing paper for GPO from Paper Corporation of U. S.; $195,539.80 worth of paper for GPO from Butler Paper Company; $316,650 worth of paper for GPO from Perkins-Goodwin Paper Company, $15,356.16 worth of staple remover for Treas. Proc. from Ace Fastener Corporation; $133,527.50 worth of paper for GPO from Marquette Paper Company; indefinite order paper for GPO from Chicago Paper Company; $20,808.50 worth of paper GPO from Cauthorne Paper Company; $85,180 worth of paper GPO from Graham Paper Company; $10,462 worth of paper GPO from Walker Goulard Plehn Company; $21,752.50 worth of chipboard for War Ord. N. J. from Ringel Brothers; $686,232.60 worth of paper for GPO from Aetna Paper Company; $20,000 worth of writing paper for GPO from Barton Duer Koch Paper Company.

HIGH TEMPERATURE HAZARD ON JORDAN BEARINGS ELIMINATED WITH SUPERLA GREASE

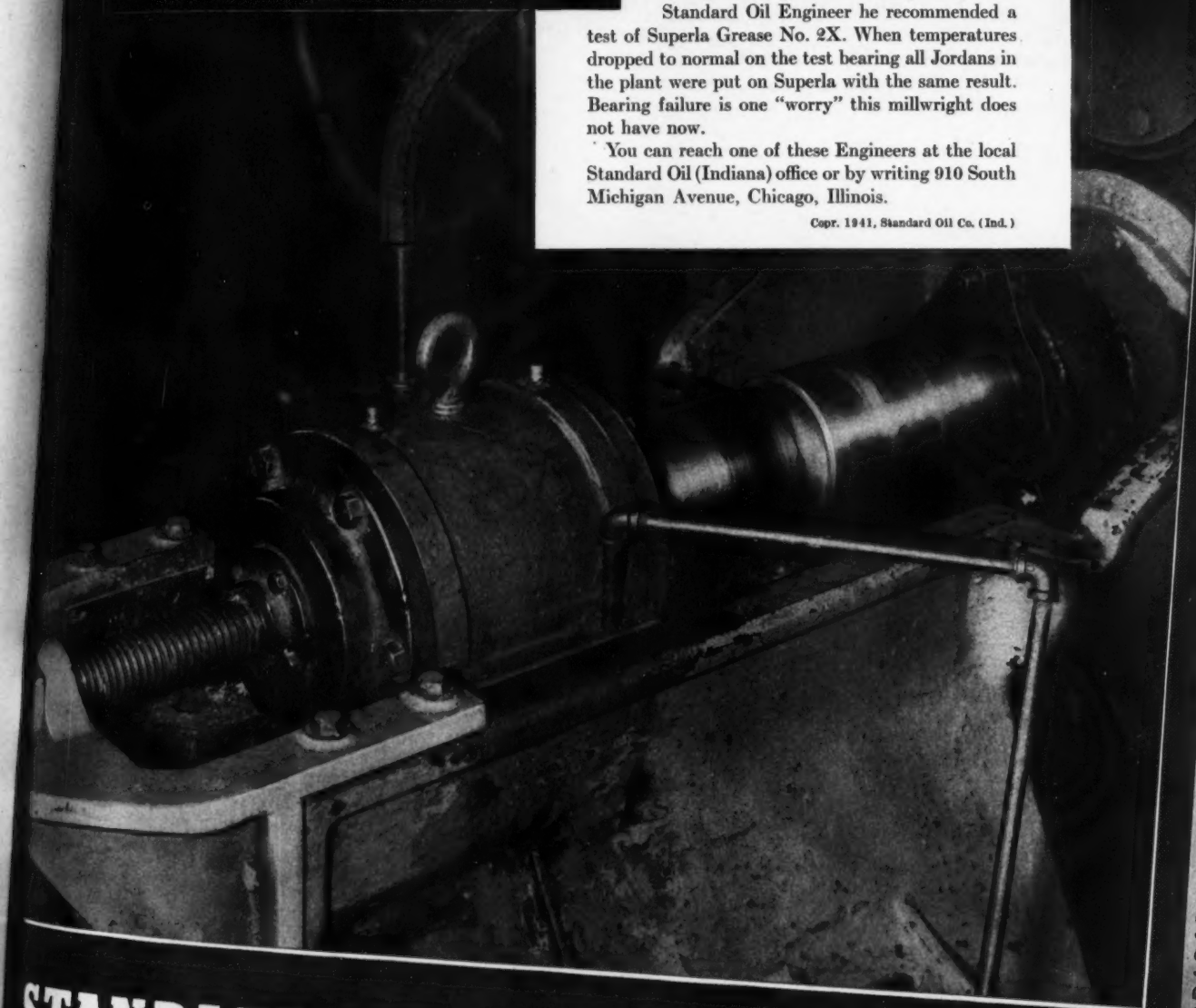
● HIGH TEMPERATURES in Jordan bearings had the millwright in a Michigan paper mill worried. These bearings cost about $360 per set not including lost machine time and labor costs in replacing them.

An ordinary type of pressure-gun grease was being used. But this was clearly not a good time to consider lubricant costs. One bearing failure would cost more than all the lubricant these bearings would use for some time to come.

When the problem was put up to a Standard Oil Engineer he recommended a test of Superla Grease No. 2X. When temperatures dropped to normal on the test bearing all Jordans in the plant were put on Superla with the same result. Bearing failure is one "worry" this millwright does not have now.

You can reach one of these Engineers at the local Standard Oil (Indiana) office or by writing 910 South Michigan Avenue, Chicago, Illinois.

Copr. 1941, Standard Oil Co. (Ind.)



STANDARD OIL COMPANY (INDIANA)

LUBRICATION ENGINEERING...LUBRICATION ENGINEERING...LUBRICATION ENGINEERING...LUBRIC

Pulpwood and Wood Pulp Census

The consumption of pulpwood and the production of wood pulp in the United States increased 27.1 and 26.6 per cent, respectively, in 1940 as compared with 1939, according to preliminary figures released by Director J. C. Capt, Bureau of the Census, Department of Commerce.

The consumption of pulpwood in 1940 was 13,742,958 cords costing $109,739,958, compared with 10,816,466 cords used in 1939 costing $84,538,835. Wood pulp production continued to expand in 1940 and amounted to 8,851,740 tons valued at $295,524,079 as compared with 6,993,334 tons valued at $209,061,107 in 1939.

All figures for 1940 are preliminary and subject to revision.

TABLE I.—PULPWOOD CONSUMPTION, BY QUANTITY AND COST, AND BY KIND OF WOOD: 1940 AND 1939

Kind of wood	1940 Cords	1940 Cost	1939 Cords	1939 Cost
Total	13,742,958	$109,739,958	10,816,466	$84,538,835
Yellow pine, Southern	5,013,478	27,557,380	3,834,644	20,126,230
Spruce:				
Domestic	2,045,519	24,226,288	1,567,643	18,419,481
Imported	963,195	13,614,573	906,806	12,575,102
Hemlock:				
Domestic	2,636,118	19,217,536	.....	.....
Imported	152,653	1,100,822	[1] 2,218,678	[1] 15,147,529
Poplar:				
Domestic	489,866	4,299,280	354,125	3,179,101
Imported	108,809	1,232,819	123,148	1,461,648
Jack pine:				
Domestic	415,202	3,672,294	.....	.....
Imported	62,773	638,645	[1] 359,755	[1] 3,355,291
Balsam fir:				
Domestic	388,577	4,067,521	283,506	2,891,304
Imported	83,609	1,043,995	74,705	891,287
Beech, birch, and maple, domestic and imported [1]	298,895	2,939,849	241,039	2,318,285
White fir, domestic and imported	213,445	1,568,522	[2] 159,428	[2] 953,343
Cottonwood	74,584	512,064	64,330	428,119
Tamarack (larch)	11,324	85,222	8,450	64,620
Other woods [3]	509,976	3,059,404	301,195	2,026,107
Slabs and mill waste	274,935	903,744	319,014	701,388

[1] Combined to avoid disclosing data for individual establishments.
[2] Domestic only.
[3] For 1940, domestic chestnut, Douglas fir, yellow poplar, oak, tupelo (and black gum), red gum, willow, and domestic and imported miscellaneous hardwoods not reported separately. For 1939, see published report.

TABLE II.—WOOD PULP PRODUCTION, BY QUANTITY AND VALUE, BY PROCESS FOR THE UNITED STATES: 1940 AND 1939

	1940 Short tons	1940 Value (f.o.b. mill)	1939 Short tons	1939 Value (f.o.b. mill)
Wood pulp, aggregate	8,851,740	$295,524,079	6,993,334	$209,061,107
Mechanical, total	1,762,821	32,753,955	1,444,875	27,710,170
Not steamed	1,609,857	30,310,139	1,342,643	25,379,398
Steamed	152,964	2,443,816	102,232	2,330,772
Sulphite fiber, total	2,591,684	128,983,210	1,946,452	86,043,861
Unbleached	1,029,895	40,532,853	729,203	24,736,494
Bleached [1]	1,561,789	88,450,357	1,217,249	61,307,367
Sulphate fiber, total	3,725,135	102,578,341	2,962,657	72,939,469
Unbleached	3,166,263	77,830,897	2,538,204	55,242,263
Bleached	558,872	24,747,444	424,453	17,697,206
Soda fiber, bleached and unbleached	548,047	27,939,508	[2] 441,565	[2] 19,710,156
Semichemical and other wood pulp	164,940	2,735,127	151,658	2,105,267
Screenings, mechanical and chemical [3]	59,113	533,938	46,127	552,184

[1] Includes data for "Superpurified" and "Rayon and special grades" to avoid disclosing figures for individual establishments.
[2] "Bleached" only.
[3] Combined to avoid disclosing data for individual establishments.

Metz Paper Co. to Build

The Metz Paper Company, 110 Tweed street, coated paper products, Pawtucket, R. I., has taken out a permit for one-story addition, for storage and distribution service.

Delaware Valley TAPPI Hears Darrow

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry met at the Engineers Club, Philadelphia, Pa. on Friday evening, November 7. Edward J. Albert of the Thwing-Albert Instrument Company presided as chairman.

John F. Darrow, Washington, D. C. representative of the American Paper and Pulp Association was the principal speaker and did an excellent job in explaining the ways in which the Government through the Office of Production Management is endeavoring to handle the very important and complicated effort to get the paper industry and others geared up to the vital defense program.

Mr. Darrow confined himself largely to the priorities problem and pointed out that any company needing to purchase operating supplies and materials for repair can be sure to receive attention through use of the P 22 form of request. There are other more specific forms but this form meets most requirements. More than 226,000 PD-1 forms have been received and acted on.

He described the M-orders relating to the shortage of copper. In this as well as chlorine and other strategic materials, it is very likely that a system of allocation will soon be announced.

The paper industry's survey of its materials needs has been accepted by the OPM as reliable.

It is very important for mills to accept defense orders. The OPM expects to establish a large compliance division soon. On army defense orders the military authorities are giving extension of ratings.

Forward buying of materials is to be restricted and inventories checked. The inventories are to be based on dollar value rather than other units.

The criteria of whether or not an order is for defense in military purchases depends on whether the paper is to be actually incorporated in the military product or used in its preparation.

Those present included: Edward J. Albert, Herbert Ash, Jr., L. B. Astbury, J. R. Atwater, Roy E. Bare, M. Benson, Loy Bixler, Earl Bosch, S. G. Briscoe, A. F. Bowers, Ellis Y. Brown, W. E. Brown, Warren A. Chilson, C. M. Connor, Paul Easton, John F. Darrow, J. D. Davis, D. S. Dieffenderfer, J. C. Dieffenderfer, Edwin C. Dreby, J. H. Good, Robert Gavin, Lois V. Hans, A. M. Hartley, H. F. Hoffman, W. Y. Irwin, V. Jacobsen, Leslie Justice, R. Lempte, H. T. Lundquist, John Macadam, G. B. Martin, M. Craig Maxwell, Louis E. McGrath, Alex. McInnes, Jr. W. B. Morehouse, L. B. Miller, J. D. Rice, John Roslund, Wm. M. Shoemaker, Edw. A. Shallcross, R. J. Stuart, Jr., Geo. M. Suydam, Philip B. Taft, Joseph J. Thomas, R. B. Thomas, Thomas W. Toovey, G. S. Towner, Roy H. Underdown, G. C. Walton, A. E. Waugh, W. R. Willets, H. L. Winslow, and Carl F. Wolcott.

Merrill Paper Co. Incorporates

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., November 10, 1941—Articles of incorporation have been filed for the Merrill Paper Company, Appleton, Wis. They are signed by A. T. Brenner, W. E. Terwilliger and Attorney E. R. Honkamp. The firm will manufacture and sell paper and paper novelties. No announcement has been made as to the company's plans or location.

New TAPPI Members

The executive committee of he Technical Association of the Pulp and Paper Industry has elected the following to membership:

Daniel O. Adams, student, Institute of Paper Chemistry, Appleton, Wis., a 1939 graduate of Oberlin College.

W. L. Badger, manager, consulting engineering division, Dow Chemical Company, Ann Arbor, Mich., a 1909 graduate of the University of Minnesota and formerly a professor at the University of Michigan.

J. S. Barton, graduate student, Institute of Paper Chemistry, Appleton, Wis., a 1940 graduate of the University of Washington.

Adolph Bednarz, chief chemist, Fort Orange Paper Company, Castleton-on-Hudson, N. Y., a 1940 graduate of the New York State College of Forestry.

John B. Chandler, bleach plant chemist, Hollingsworth & Whitney Company, Mobile, Ala., a 1937 graduate of Bowdoin College and formerly with the Brown Company, Berlin, N. H.

John W. Close, chief chemist, United Wallpaper Factories, Inc., Chicago, Ill., attendant Alfred University and formerly with the Imperial Paper and Color Corporation, Glens Falls, N. Y.

M. L. Edwards, assistant plant engineer, pulp division, Weyerhaeuser Timber Company, Longview, Wash., a 1924 graduate of Oregon State College and formerly with the Bingham Pump Company, Portland, Ore.

Donald L. Erickson, chemist, Oregon Pulp and Paper Company, Salem, Ore., a 1939 graduate of Oregon State College and formerly with the Weyerhaeuser Timber Company, Longview, Wash.

Sumner C. Fairbanks, head of research, The Hamersley Manufacturing Company, Garfield, N. J., has been transferred from the Associate to the Active grade.

W. L. Fleming Jr., paper testing laboratory, Fleming & Sons, Inc., Dallas, Texas, a 1940 graduate of Notre Dame University.

William G. Ford, technical assistant, American Writing Paper Corporation, Holyoke, Mass., a 1938 graduate of the University of Maine and formerly with the Crocker-McElwain Co., Holyoke, Mass.

Karl E. Forsgren, assistant to patent manager, Kimberly-Clark Corporation, Neenah, Wis., a 1941 graduate of the University of Wisconsin.

L. W. Heard, superintendent, Ontonagon Fibre Corporation, Ontonagon, Mich., has been transferred from the Associate to the Active grade.

John F. Hicks, assistant chief chemist, the Lehon Company, Wilmington, Ill., a 1927 graduate of the Rensselaer Polytechnic Institute and formerly with Johns-Manville Corporation, Manville, N. J.

Gust Johanson, assistant superintendent, Penobscot Chemical Fibre Company, Great Works, Me., has been transferred from the Associate to the Active grade.

Edgar A. Lauring, research engineer, Minnesota and Ontario Paper Company, International Falls, Minn., has been transferred from the Associate to Active grade.

Harold J. Lausman, assistant chemist, Consolidated Water Power and Paper Company, Appleton, Wis., a 1938 graduate of Lawrence College.

Joseph S. Reichert, manager of perozygen products development, R. & H. Chemicals Dept., E. I. duPont de Nemours & Co., Inc., Niagara Falls, N. Y., a 1915 graduate of Miami University, and formerly with the Chemical Warfare Service, Edgewood Arsenal, Md.

Otto H. Sangder, chief chemis, Rayonier Inc., Grays Harbor Div., Hoquiam, Wash., has been reinstated as an Active member.

J. G. Macdonald, mill manager, J. Ford & Co., Ltd., Portneuf Station, Que., a 1926 graduate of Queens University and formerly with the Shawinigan Chemicals Company, Shawinigan Falls, Que.

Joseph F. Senuta, chemist and technical director, Louis Dejonge Coated Paper Company, Fitchburg, Mass., has been transferred from the Associate to the Active grade.

A. H. Thuerer, secretary and general superintendent, Appleton Woolen Mills, Appleton, Wis., a 1912 graduate of the University of Wisconsin.

Arthur M. Worthington, Jr., chemist, Acme Paper Board Company, Reading, Pa., a 1925 graduate of the Massachusetts Insitute of Technology and formerly with Fraser Paper Ltd., Madawaska, Me.

J. Howard Wright, chemist, Southland Paper Mills, Inc., Herty, Texas, attended Clarkson College of Technology and formerly with the National Paper Products Company, Carthage, N. Y.

Indianapolis Demand Brisk

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., November 10, 1941—The paper industry in this section seems to have settled well into the new order of things and business last week continued brisk. Mills in Indiana are producing more stock than they did a year ago and apparently are having little difficuly in selling the increased production. Prices last week held fairly steady at the previous high levels for practically all lines.

It is rather evident now that priorities on new construction will not be scaled as closely as was feared at one time and the last week saw an increasing demand for building paper and roofing. Prospective new construction is higher now than it has been at any fall in history and only extremely low temperatures or more stern priority rulings will prevent the year from being the best on record. Dealers have fairly well balanced stocks, but they are none too large.

Fine paper demand held good last week with prices steady to firm. The larger local printers report quite a backlog of orders and it is expected this will keep fine paper demand at a high level during most of the late fall and winter.

Kraft continued to be wanted with some jobbers reporting difficulty in filling orders. Retailers are ready buyers of bags and wrapping paper and the demand is expected to continue heavy until after the holidays. Tissues were strong last week.

Volume of newsprint is increasing in this territory due in some part to seasonal influences. Advertising lineage in the metropolitan papers is higher than it was a year ago.

Box factories are working to capacity and seem unable to build up any appreciable warehouse stocks. Some grades of fancy holiday boxes are very difficult to secure. Other container factories are working at capacity and are having all the business they can handle.

A good demand is reported for fine grades of rags, but there were no price changes last week. Demand for old paper continued active and warehouse stocks are low.

TAPPI Meets at Camas

The second dinner meeting of the 1941-42 season of the Pacific Section of The Technical Association of The Pulp and Paper Products Section was held at the Crown Willamette Inn, Camas, Washington. Walter Jacobi arranged for the meeting which had an excellent attendance of 122. The meeting was presided over by E. P. Wood, Vice-Chairman of the Section. It was announced that the next dinner meeting would be held at Longview, Wash. on Jan. 6.

"The Influence of Wood Characteristics on Pulp Quality" was presented by Mr. C. A. Anderson of the Technical Department of the Crown Willamette Paper Company, division of Crown Zellerbach Corporation, Camas, Washington. It was entered for the Shibley Award. This described tests which Mr. Anderson had conducted on wood in various stages of over-ripeness, from incipient decay to advanced decay.

The second paper was a review of "Viscosity Testing of Wood Pulp" by Dr. Leo Friedman, Asst. Prof. of Chemistry, Department of Chemistry, Oregon State College, Corvallis, Oregon. This reviewed many of the proposed methods of determining viscosity with cuprammonium solutions and with other chemical salts. During the discussion it was brought forth that although viscosity is not an absolute measurement of the character of pulp, that it serves of considerable value in controlling mill operations if it is properly evaluated.

The following were included among those present: O. C. Abbott, C. E. Ackley, C. A. Anderson, F. R. Armbruster, John Ashby, R. E. Astle, Lee C. Baltzelle, W. R. Barber, Chester Beals, Eudore A. Berry, Paul S. Billington, Louis H. Blackerby, George H. Beisse, Robley A. Butler, J. E. Cater, R. E. Chase, R. E. Chase, Jr., J. W. Clarke, Fred Covel, J. V. B. Cox, R. E. Dana, J. D. Darby, Leslie Darr, Thurman E. Dear, Harold Deery, David M. Dibrell, John Doering, R E. Drane, E. G. Drew, C. A. Enghouse, A. E. Erickson, Don Erickson, Floyd Ewing, Carl Fahlstrom, W. L. Failing, Francis W. Flynn, J. P. Foley, Leo Friedman, C. S. Funk, Carl L. Gehman, Harry W. Glenn, W. G. Goodwin, C. H. Graham, T. H. Grant, John Grill.

R. B. Haight, R. N. Hammond, John F. Hart, H. A. Hauff, Jan Haugerod, Milan Hill, Edw. J. Hinde, H. F. Hoehne, C. F. Holcomb, W. F. Holzer, Dr. H. H. Houtz, C. M. Howell, Otto L. Hudrlik, Lloyd O. Hutchison, J. B. Hyde, Lyal Jones, W. A. Kelly, John W. Klein, Harold Lange, Julius La Pointe, J. E. LeTourneux, John A. Liedtke, Clyde M. Lieser, John J. Lobb, E. E. Logsdon, C. J. McAllister, C. R. McCully, Loyd McDonald, John J. McNair, Robert W. Martig, F. R. Martin, Vern Mauerman, Otto Michaelis, Paul F. Miescke, R. G. Mispley, T. E. Moffitt, A. G. Natwick, B. E. Natwick, George Nelson, S. Norman, M. H. Norton, Max R. Oberdorfer, F. A. Olmsted, A. W. Olson, Gus Ostenson.

Wm. Pittam, Herbert Peterson, J. C. Plankinton, E. D. Rich, H. H. Richmond, E. J. Roake, Ben H. Reed, Wm. Runckel, Walter A. Salmonson, Curtis E. Sawyer, Harlan Scott, H. J. Shelton, Brian Shera, C. Sholdebrand, Ray Smythe, C. A. Stevey, Chauncey L. Storms, Bert E. Sullivan, F. F. Sullivan, V. L. Tipka, Preston Varney, H. A. Vernet, Harold C. Wall, W. A. Wenzel, Don G. Wilson, James A. Wilson, D. D. Wilma, Chas. H. Witt, Jr., Roy L. Wohlsein, Edward P. Wood and E. W. Zane.

NEW POWER PLANT APPROVED

(Continued from page 7)

of beginning employees are raised a corresponding three cents.

Work on New Dam Progresses

Pouring of concrete has been resumed by the Consolidated Water Power and Paper Company on its new dam on the Wisconsin River at the main mill at Wisconsin Rapids, Wis. The work has been interrupted because of high water from heavy fall rains, and the schedule is about a month behind. The project is about 75 per cent completed, and installation of the Tainter gates has been started. Approximately 4,000 cubic yards of concrete are still to be poured at the up-river end. The dam replaces an obsolete wooden structure.

Mill Named in Damage Suit

The Appleton Coated Paper Company, Appleton, Wis., is named as a defendant in a damage suit for $30,000 brought by Mrs. Clara Sattell of Milwaukee, Wis. The case is being heard by Judge Joseph R. McCarthy in the circuit court at Appleton, Wis.

The paper company and the Olson Transportation Company are being sued jointly. The case is based on injuries suffered by the plaintiff's husband, Ben Sattell, March 10, 1939 in a fall at the Olson company's offices, and the allegation that his death on the following May 9 was the result of the injuries. The Olson company property had been leased from the paper company. Negligence on the part of the defendants is charged.

Kimberly-Clark Club Meets

The Chemical Engineers Club of the Kimberly-Clark Corporation, Neenah, Wis., held a dinner at the Copper Kettle, Appleton, Wis., Tuesday evening, November 4. The group adjourned afterwards to the Institute of Paper Chemistry, where Dr. George Sears gave a demonstration lecture on the electron microscope. Edward Voightman was chairman of the program committee.

Announces Beard-Truttschel Engagement

The engagement was announced last week of Miss Mary Agnes Beard and Paul E. Truttschel. Mr. Truttschel is a technical assistant in the analytical department of the Institute of Paper Chemistry, Appleton, Wis., and Miss Beard also is employed there. The wedding will take place November 15 at Memorial Presbyterian church at Appleton.

Work Progressing on Cohoes Plant

[FROM OUR REGULAR CORRESPONDENT]

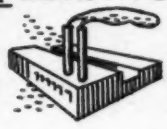
COHOES, N. Y., November 10, 1941—An official of the Albany Corrugated Containers Company stated this week that no definite date has been fixed for the opening of the new plant in this city. Several weeks ago the concern purchased the old abandoned mill of the Gledhill Company and repairs are now under way. A new roof is being placed on the building as well as the construction of a new loading platform. Approximately 100 workers will be employed at the plant when operations are under way and the positions will be about equally divided between men and women. It is understood that the Albany plant will be abandoned with the opening of the new plant here.

TO MILLS DESPERATELY IN NEED OF INCREASED DRYER CAPACITY

● If that dryer section of yours simply won't dry your paper fast enough . . . here's a practical solution.

● If the rest of your machinery is being throttled down because of that dryer bottleneck . . . here's the way to roll at full speed.

● The perfect answer . . . the only answer . . . is a Black-Clawson vertical dryer arrangement. Scores of mills (and our files are loaded with the cold, hard facts) have turned to verticals and licked the number one headache . . . production.



● Here is the way verticals can help you. Using your present dryers, Black-Clawson adds others on a framework that goes up . . . that requires no new plant expansion. In fact, your finishing equipment remains put. Furthermore, downtime is less than you might think. So is cost. So is the engineering problem. In fact some installations have been made "on the run". Actually, there is no construction problem for Black-Clawson developed verticals and has built many vertical stacks . . . in some cases, eight high. These stacks are working . . . working perfectly. And so will yours.

VERTICAL ADVANTAGES
● Substantially increased dryer capacity.
● Elimination of dryer felts and dryer felt rolls.
● Elimination of a 'space' problem.
● Faster vapor removal.
● Reduction in broke losses.
● Sheahan rope carrier for faster, safer rethreading of sheet after breaks.

● If you are serious about needing new drying capacity, telephone Hamilton 4050. THE BLACK-CLAWSON COMPANY, Hamilton, Ohio. Shartle Division, Middletown, Ohio. Dilts Division, Fulton, N. Y.

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COMPANY

Obituary

Benjamin D. Riegel

Benjamin DeWitt Riegel, of Fairfield, Conn., chairman of the board of the Riegel Paper Corporation, of Riegelsville, N. J., and president of the Riegel Textile Corporation, of 342 Madison avenue, New York City, died November 6 at Riegel Ridge, a recreation center near Milford, N. J. for employees of four Riegel paper mills in this vicinity. Mr. Riegel was sixty-three years old.

He was also president of the Riegel Sack Company, of Jersey City, N. J., and president of two

BENJAMIN D. RIEGEL

Southern cotton mills, the Ware Shoals Manufacturing Company, of Ware Shoals, S. C., and the Trion Company, of Trion, Ga.

Mr. Riegel was born in Riegelsville, N. J., the son of Benjamin and Nettie DeWitte Riegel. He attended Riegelsville Academy at Riegelsville, Pa., and Lehigh University, Bethlehem, Pa. Upon graduating from Lehigh in 1898 he entered the paper and sack business. His grandfather, John L. Riegel, had founded the Riegel Paper Company in 1873. Both the Riegelsville in New Jersey and in Pennsylvania are named for the family.

Mr. Riegel was also interested in dairying in the South and raised prize cattle as a hobby. Last June he received an honorary degree of Doctor of Laws from Presbyterian College, Clinton, S. C.

Surviving are his wife, Mrs. Leila Edmonston Riegel, and a daughter, Mrs. Katherine Riegel Emory, of Darien, Conn.

W. L. Raymond

W. L. (Lloyd) Raymond, vice president of Rayonier Incorporated, passed away suddenly at his home in Seattle, Wash., on Sunday, November 9. Mr. Raymond's death will be keenly felt by his business associates and many friends in the pulp and paper industry in which he has been a prominent figure for many years.

Lloyd Raymond was born in Minocqua, Wis., on September 14, 1894, the son of Mr. and Mrs. Walter B. Raymond. With his family he moved to Eagle River, Wis., in 1901 where he graduated from high school at the age of fifteen. Later he attended Valparaiso University and in 1914 he became associated with what is now the Minnesota and Ontario Paper Company, in the logging and land departments.

He enlisted in the service during the World War and served in France for a year.

In the fall of 1919 Mr. Raymond engaged in the construction of what is now the Washington Pulp and Paper Company, Division of the Crown-Zellerbach Corporation in Port Angeles, Wash. From there he went to San Francisco where he spent several years in the company's executive offices. When the first mills in the Pacific Northwest now owned by Rayonier Incorporated were built, Mr. Raymond made his headquarters in Seattle where he became vice president and general manager of Rayonier Incorporated.

In 1930 Mr. Raymond married Nora A. Aldwell of Seattle and Port Angeles. Beside his widow, the deceased leaves two daughters Lloys Doreen aged 7, and Noreen Anne aged 2½, a sister, Mrs. John Rellahan of Upper Montclair, N. J., to mourn his untimely death.

Mr. Raymond was a member of the Masonic Order. Funeral services were held in Seattle on Wednesday, November 12.

John E. Inman

John E. Inman of Milwaukee, Wis., salesman for the Gaylord Container Corporation, was fatally injured in an automobile accident about midnight on Saturday, November 1, at Stanley, Wis. He died in a hospital at Stanley Sunday. He was driving alone while on a business trip, lost control of his car, and crashed into a culvert.

Mr. Inman is survived by his widow and two daughters. He was 47 years old, was born in England, and had been a resident of Milwaukee for thirty years. Funeral services were held at Milwaukee November 5 and interment was made in Forest Home cemetery there.

Brotherhood Buys Defense Bonds

[FROM OUR REGULAR CORRESPONDENT]

GOUVERNEUR, N. Y., November 10, 1941—A meeting of the local branch of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers was held here recently at which officials pointed out to members that they can aid greatly in defense effort by purchasing government savings bonds. Clarence White, president, said that the organization decided to purchase the bonds after an address by Jacob Stepan, labor organizer, in which he urged the union and its members to invest in them. It was announced that the savings bonds will be purchased every two or three months. President White, delegate to the International Union Convention held recently at Toronto, Ont., gave a report on that meeting while delegates to the recent banquet of the Northern New York District Council of Paper mills also reported. The local voted to raise initiation fees starting November 1 for both men and women but dues will remain the same.

CONSTRUCTION NEWS

Rhinelander, Wis.—The Rhinelander Paper Company, manufacturer of glassine, greaseproof and other paper stocks, has completed plans for new addition to mill, consisting of a one-story building, to be equipped for screening service, providing considerable expansion in that division. It will be known as Building No. 6. No estimate of cost announced. Erection will begin soon. Francis W. Johnson is engineer.

Kansas City, Kan.—The Sealright Company, Fairfax and Richel roads, manufacturer of paper board bottle caps, an interest of the Oswego Falls Corporation, Fulton, N. Y., has superstructure under way on new one-story addition, to be owned by the Kansas City Industrial Land Company, Kansas City, and occupied under long-term lease, as previously mentioned in these columns. Company will take over structure as soon as it is ready for occupancy, and will equip for large increased production in converting department. Cost is reported over $65,000, with equipment. The Collins Construction Company, Davidson Building, Kansas City, Mo., has the general erection contract. Charles E. Keyser, 609 Minnesota avenue, Kansas City, Kan., is architect.

Rochester, N. Y.—The Haloid Company, 9 Haloid street, manufacturer of processed photographic papers, films and allied specialties, has plans under way for new addition to mill, consisting of a one-story structure, about 40 x 250 feet, to provide for large expansion in production department. Cost is reported over $85,000, with equipment. It is expected to ask bids soon on general erection contract. S. Firestone, 59 South avenue, Rochester, is architect and engineer.

Atlanta, Ga.—Fire recently damaged a portion of building of I. V. Sutphin Company, 476-78 Marietta street, dealer in waste papers. Loss reported close to $12,000. It is planned to rebuild.

Milwaukee, Wis.—The Johnson Box Company, 714 East Keefe avenue, manufacturer of corrugated boxes and containers, a division of the Inland Container Corporation, has awarded general contract to the Hunzinger Construction Company, Butler, Wis., for two-story addition, about 30 x 48 ft., for office and other operating service. Plans have been filed and work is being placed under way. No estimate of cost announced. Leigh Hunt, 152 West Wisconsin avenue, Milwaukee, is architect.

Minneapolis, Minn.—The Ruberoid Company, 50 Lowry avenue, North, manufacturer of roofing papers, mill board, etc., has awarded general contract to Clinton Bergman Construction Company, Minneapolis, for new raw material storage bin unit and conveyor pit at local plant. No estimate of cost announced. Work will be carried out at once. Main offices are at 500 Fifth avenue, New York, N. Y.

Los Angeles, Calif.—The Anchor Paper Company, 9337 Garfield avenue, South Gate, Los Angeles, commercial paper goods, has taken out a permit for erection of new one-story building, to be used for storage and distributing service. Cost reported close to $12,000, with equipment. Erection is being placed under way.

Tampa, Fla.—The Gaylord Container Corporation, 2909 Inman avenue, manufacturer of corrugated boxes and containers, has work in progress on one-story addition to local plant, recently referred to in these columns, to be used for general expansion in production division, and will have the structure ready for service at early date. It is reported to cost approximately $45,000, with equipment. Albert Haworth, 628 Raymond avenue, Tampa, has the contract for erection. Main offices of company are at 111 North Fourth street, St. Louis, Mo.

Bastrop, La.—The Southern Kraft Corporation, manufacturer of kraft paper stocks, has extensions and improvements under way at local mill, with changes in equipment and facilities to allow for the production of bleached or unbleached sulphate fiber up to the full capacity of plant, developing the mill for this interchange of output according to requirements. Company also is carrying out an expansion program at branch mill at Mobile, Ala., previously referred to in these columns, with installation of additional equipment to increase capacity of plant from 400 to about 480 tons per day. Work is scheduled for completion at early date.

Appleton, Wis.—The Appleton Coated Paper Company, manufacturer of coated book, bond and cover stocks, has filed plans for one-story addition, to be used for general operating service. No estimate of cost announced. Work will be placed under way at once.

Brooklyn, N. Y.—The Alpha Paper Box Company, 369 St. Marks avenue, manufacturer of folding and other paper boxes and containers, has leased space in building at 601 Grand avenue, known as the Knox Hat Building, and will equip and occupy for expansion.

Glens Falls, N. Y.—The Imperial Paper and Color Corporation, Warren street, manufacturer of wall papers, has work under way on new addition to mill, for which general contract recently was awarded to Charles E. Waggaman, Glens Falls, as previously noted in these columns. New unit will be used for extensions in production department, and will be one-story, 45 x 150 feet. Cost estimated over $65,000, with equipment. Structure will be ready for occupancy in near future.

Merritton, Ont.—The Alliance Paper Mills, Ltd. manufacturer of book, bond, glassine and other paper stocks, has approved plans for new addition to sulphite pulp mill, consisting of a multi-story structure, 20 x 50 ft., and 20 x 35 feet, to be equipped for increased capacity. It is estimated to cost over $100,000, with equipment. General erection contract has been awarded to the Redfern Construction Company, Ltd., 36 Toronto street, Toronto, Ont. J. Charles Day, 630 Dorchester street West, Montreal, Que., is consulting engineer. Company is affiliated with the Howard Smith Paper Mills, Ltd., 407 McGill street, Montreal.

Georgetown, Ont.—The Provincial Paper Company, Ltd., 388-96 University avenue, Toronto, Ont., plans one-story addition to Barber Division mill at Georgetown, used for production of book, cover and kindred paper stocks. Cost is reported close to $50,000, including equipment.

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending November 12, 1941

	High	Low	Last
A. P. W.	1½	1½	1½
Armstrong Cork Co.	28¼	25¼	25¼
Celotex Corp.	7¾	7	7
Celotex Corp., pf.	67	66½	66½
Certain-Teed Products Corp.	3	2¾	2¾
Certain-Teed Products Corp., pf.	32½	28¾	29
Champion Paper & Fibre Co.	18½	17¾	17¾
Champion Paper & Fibre Co., pf.	105½	104	104
Congoleum-Nairn Co.	15¾	15	15
Container Corp. of America	14¼	13¼	13¼
Continental Diamond Fibre Co.	9	8⅜	8⅜
Crown-Zellerbach Co.	12¾	12½	12½
Crown-Zellerbach Co., pf.	90⅜	89¾	89¾
Flintkote Co.	12½	11⅜	11⅜
Robert Gair	2⅜	2⅛	2⅛
Robert Gair, pf.	11⅜	11	11
International Paper & Power	17⅛	15½	15¾
International Paper & Power, pf.	61¼	58⅜	58⅞
Johns-Manville Corp.	57⅞	54½	54½
Johns-Manville Corp., pf.	122½	122½	122½
Kimberly Clark Corp.	29½	29½	29½
MacAndrews & Forbes	24	22½	22½
MacAndrews & Forbes, pf.	....	....	....
Masonite Corp.	26	24¾	24⅜
Mead Corp.	7½	7⅛	7¼
Mead Corp., pf.	66	63	63
Paraffine Companies, Inc.	27	27	27
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	12½	12⅛	12⅛
Rayonier, Inc., pf.	27½	26½	26½
Ruberoid Co.	19	18¼	18¾
Scott Paper Co.	38	37	37
Scott Paper Co., pf.	111	109½	111
Sutherland Paper Co.	18½	18	18
Union Bag & Paper Corp.	9¾	8¾	8¾
United Paperboard Co.	4	3⅜	3⅜
U. S. Gypsum Co.	51	44¾	45
U. S. Gypsum Co., pf.	175	175	175
West Virginia Pulp & Paper Co.	18⅛	17¾	17¾

New York Curb Exchange

High, Low and Last for Week Ending November 12, 1941

	High	Low	Last
American Box Board Co.	4½	4⅜	4½
Brown Co., pf.	23¾	23¼	23¼
Great Northern Paper	37½	37½	37½
Hummel-Ross Fibre Corp.	5½	5⅜	5½
National Container Corp.	10¾	10⅜	10⅜
St. Regis Paper Co.	2⅛	1⅞	2
St. Regis Paper Co., pf.	112¼	112¼	112¼
Taggart Corp.	2⅜	2⅜	2⅜

Profits of Union Bag Up

Net profits of the Union Bag and Paper Corporation for the third quarter, after providing $973,060 for Federal income and excess profits taxes at rates required under the 1941 Revenue Act, amounted to $607,470, equal to 48 cents a share on 1,272,437 shares of capital stock outstanding, according to the quarterly statement released for publication today. This compares with net profits of $485,023, or 38 cents a share, for the preceding quarter, and of $595,663, or 47 cents per share, for the corresponding quarter last year.

Alexander Calder, president of the corporation, in his report to the stockholders, stated that sales had continued to improve in the third quarter, amounting to $6,955,943. This represents an increase of 25 per cent over sales of $5,565,610 for the corresponding quarter last year. Net sales for the 12 months ended September 30, 1941 amounted to $25,728,482, compared with $21,124,903 for the 12 months ended September 30, 1940, an increase of 22 per cent.

Tax reserves in the 12 months period just ended show an increase of $1,088,500, or 85 cents a share in comparison with the comparable period a year ago. After providing $2,501,000 for Federal income and excess profits taxes, net profits for the 12 months ended September 30, 1941 amounted to $1,932,809, or $1.52 a share on the outstanding capital stock. In the comparable 12 months period a year ago, when tax reserves were $1,412,500, net profits amounted to $2,235,849, or $1.77 a share on capital stock then outstanding.

Reynolds Metals Earnings Up

Despite more than doubled Federal income and excess profits taxes, earnings of the Reynolds Metals Company in the nine months ending with September 27th, 1941, showed substantial increases over the comparable period for the previous year.

The consolidated earnings before provision for income and excess profits taxes for the nine months ending September 27th, 1941, were $4,808,744, as compared with $3,047,607 for the comparable period of 1940, according to announcement today by Richard S. Reynolds, Jr., Treasurer of the company.

In the statement issued today, earnings per share of common stock for the 1941 nine-month period are shown at $2.04, as compared to $1.78 per share for the same period of 1940. Excess profits taxes have been adjusted for the first, second and third quarters to comply with the 1941 tax laws. The taxes for 1941 were $2,515,704, whereas for the comparable period of 1940 they were $1,019,070.

Consolidated earnings before provision for income and excess profits taxes for the third quarter of 1941 are shown at $1,441,687. After deduction for estimated normal income and excess profits taxes, a net profit of $756,287 is shown, which results in earnings of $687,725 for the 1941 third quarter, after deduction for preferred dividend requirements. This shows net earnings of 67 cents per share for the common stock, as compared with 63 cents per share earned in the third quarter of 1940.

Requests Bond Tenders

The Bankers Trust Company, as trustee for International Paper Company first and refunding 5% sinking fund mortgage bonds, Series A and B, announced yesterday that it will receive at the corporate trust department until noon on November 17, at prices not to exceed 102½, offers for the sale to it of sufficient of these bonds to exhaust the sum of $107,389 now in the sinking fund.

Gaylord Nets 71 Cents

The Gaylord Container Corporation for the quarter ended September 30 reports a net income of $453,828, or 71 cents a common share, for like 1940 quarter, net income $452,424, or 71 cents a share. For nine months ended September 30, net income was $1,059,867, or $1.57 a share; for like 1940 period, net income $1,010,093, or $1.47 a share.

National P. & T. Earns $183,678

The National Paper and Type Company and subsidiaries for the year to August 31, reports a net profit of $183,678, equal, after preferred dividends, to $2.27 each on 64,392 shares of common stock, against $188,029, or $2.34 a common share, in previous fiscal year.

The Unbalanced Pulp Budget

Figures which have just become available show that wood pulp consumption is running steadily ahead of total new supply, causing continued drain on reserve stocks, according to Ossian Anderson, president, Puget South Pulp and Timber Company.

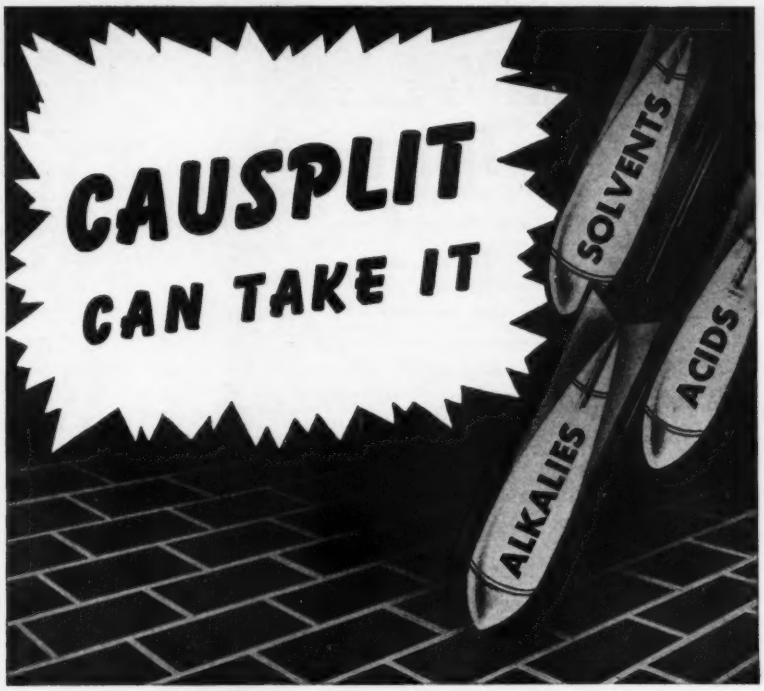
"Domestic production is establishing an all-time record this year," Mr. Anderson declared: "imports, while still below last year's total, have shown increases in recent months, and exports are below those of last year. Nevertheless, inventories of paper grades of pulp were depleted an estimated 186,000 tons to meet demand in the first eight months of 1941."

Production of paper grades of sulphite and sulphate pulps was 4,615,000 tons and 503,000 tons were imported, making 5,118,000 tons of new supply for the first eight months of 1941, Mr. Anderson stated. Exports took 199,000 tons, leaving 4,919,000 tons of new supply available for domestic consumption. Apparent consumption, including inventory withdrawals, were 5,112,000 tons for the period.

Reserve stocks at docks and at pulp and paper mills, on September 1, 1941, down to 508,000 tons, were more than 50% below April 1, 1940, depletion during that period having been 564,000 tons, Mr. Anderson said. Of this amount, 197,000 tons represented decrease in reserve stocks of unbleached sulphite, which on September 1, 1941, were down to 233,000 tons.

"Possibly forecasting ultimate balancing of the pulp budget," Mr. Anderson observed, "new supply of sulphite and sulphate paper grades available for domestic consumption increased 528,000 tons, while apparent consumption increased only 354,000 tons in the five months ended August, 1941; gain in available new supply exceeded increase in demand in this period."

Although production of all chemical pulps has been near capacity all through 1941, Mr. Anderson expects a greater rate production in the closing months of the year, with new capacity at Puget Sound Pulp Company's plant and at other mills affecting results in remaining months. He predicts, however, that consumption will continue for some time to ourrun new supply, necessitating further withdrawals from already low reserve stocks.



CAUSPLIT is a new quick-setting cement with amazing chemical and mechanical resistance. It withstands a wide range of strong acids, alkalies and solvents at temperatures up to 350°F.

In addition, it is easy to handle and free from bothersome acid ingredients. Extensive tests have proved Causplit to be first-rate for corrosion-proof construction of industrial equipment. Actually, Causplit is a considerable improvement over Asplit, which has been widely used in many industries for more than 7 years.

CHEMICAL PLANTS: Causplit is the ideal cement not only because of its resistance to hydrofluoric, phosphoric and other strong acid conditions, but also because it is unaffected by alkalies, such as caustic, soda ash and hypochlorites. Causplit naturally stands up under the salts of alkalies and acids in the linings of equipment and floors.

PULP AND PAPER MILLS: Used in pulp digesters and bleaching systems to withstand both acids and alkalies. For instance, it is unattacked by sodium sulphite, sulphurous acid, chlorine, as well as hypochlorite, caustic soda and soda ash. Its characteristics enable it to withstand both mechanical and thermal shocks. Here again Causplit can be used for both tank and floor work.

STEEL MILLS: Causplit is used in the equipment for both acid and alkali cleaning of steels. It is not attacked by hydrochloric and sulphuric acids in the strengths used in the steel industry. It differs from most other acid-proof cements in that it is also resistant to hydrofluoric acid, which is used in the stainless steel industry.

Since we have manufactured acids, alkalies and other chemicals for many years, we ourselves have had considerable experience in the use of special cements for corrosion-resistant equipment. Write to us for technical help with your specific problems.

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PAPER TRADE JOURNAL
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Henry J. Berger
EDITOR

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COMING EVENTS IN PAPER INDUSTRY

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

LABOR DISPUTES

The prevailing attitude of labor and its motivating policy is disturbing. Given more encouragement by the Roosevelt Administration than by any other power, organized labor has advanced further in the last eight years than doubtless their own influential leaders thought was possible. Ask an inch and take a mile, is a human frailty but it is unfortunate for the country that this over-reaching ambition should culminate in what amounts to a defiance of the President by John L. Lewis.

The actual cause that made possible this incident seems clearly attributable to the inconsistencies and inequalities in the Wagner Act and in many of the interpretations and frequent arbitrary decisions in cases involving differences between labor and management. The National Labor Relations Act could be substantially improved and many practical suggestions for making it a more equitable law have been made by the Chamber of Commerce of the United States, by the National Association of Manufacturers and by legislators.

The paramount issue in the current situation in the coal industry and the point of great importance now and in the future, is that of the closed-shop. If the rights of individuals under the Constitution are not to be abrogated it would appear that the closed-shop principle is a threat to that liberty. The right to work has always been considered as a man's privilege. He is a free agent to bargain with any employer for any lawful purpose. This freedom of action cannot exist under the closed-shop, for the opportunity to work must pass from the individual to the decision of a union. It is for this reason that the principle of the closed-shop has been called inimical to the interests of individual labor and so it appears to be. To close the labor market to all not members of a union is a radical departure from the American conception of free enterprise and constitutional freedom.

In a recent declaration on the closed-shop, the National Defense Mediation Board stated that a closed shop is legal if an employer voluntarily accepts it, but there is nothing in the law which now requires an employer to grant closed-shop conditions to any union. At the same time the Board refrained from making a decision for or against the demand of the CIO-affiliated United Mine Workers, for an all-union shop in the mines owned by the steel companies.

The Mediation Board explained that Senator Walsh, Democrat of Massachusetts, chairman of the committee that recommended passage of the labor measure, assured the Senate in the course of his debate on the bill that, "No employer may discriminate in hiring a man, whether he belongs to a union or not, and without regard to what union he belongs to; but if an employer wishes to agree and to make a contract of his own volition with his employees to hire only members of a company union or of a trade union, he can do so."

In a dispute between the union and the coal mines operated by the steel companies, the mine operators opposed the closed shop on the ground that every worker has the right to choose whether he will or will not join the union. The union refused to permit its members to work with non-union men. A summary of the report of the Mediation Board said in part: "It becomes clear . . . that there could be no meeting of minds with respect to the conflicting rights asserted, because of the possible repercussions of any agreement here made on the steel and shipbuilding industries, in one or both of which most of the interests involved in this dispute are engaged. There are very real and important problems of union organization in those industries and in the opinion of the Board they should be disposed of solely on their own merits, unaffected by any recommendations made by the Mediation Board in this case. Under these circumstances we are unwilling to substitute our recommendation for a voluntary agreement."

The labor policy of the Administration under investigation by the Senate was in part disclosed by Sidney Hillman, co-director of the Office of Production Management. Mr. Hillman testified that the rejection of the low bidder, the Currier Lumber Company, of Detroit, for the construction of 300 defense homes, was solely on his advice; that any other action would cause serious labor trouble in Detroit, implying retaliation from the American Federation of Labor by strikes against the Congress of Industrial Organizations unions in other industries through a general strike of the AFL truck drivers. The Currier concern recently made a five-year closed-shop

agreement with the CIO, the AFL having failed to organize the Currier employees. The Government's refusal of the Currier bid followed an agreement between the Labor Division of the OPM and the Building Trades Division of the AFL. This agreement the AFL contended gives a virtual closed-shop on all defense construction projects.

When questioned by Senator Truman, Mr. Hillman said in part that, "Sound labor and sound procurement policies alike must take into consideration a wide variety of factors. Price cannot and should not be the sole factor." In reply, Senator Brewster said that "Under the precedents you are establishing in this case, I don't see why practically the power of Government in this whole procurement program wouldn't be transferred to your office." Mr. Hillman replied: "Senator, my advice is only given; it does not have to be taken by the agency, if they don't want it."

It seems clear from the record that the labor laws and the administration of them should be considerably improved; that the President's moral persuasion plus full publicity to enlist public opinion, and the enlistment of the Conciliation Service and the Mediation Board before a strike is called, have not proven very successful. Since June, 1940, the OPM lists 259 strikes interfering directly and indirectly with essential defense production. Other estimates of time lost in defense strikes, including the disputes at the Carnegie-Illinois Steel Corporation and the Great Lakes Steel Corporation, aggregate 10,000,000 man days. A better labor policy is urgently needed.

Joseph M. Conway Appointed

Joseph M. Conway of Green Bay, Wis., was honored by appointment to the National Panel of Arbitrators of the American Arbitration Association it was officially announced on November 10 by Cornelius Vanderbilt Whitney, its president.

Mr. Conway, president and director of the Hoberg Paper Mills of Green Bay, is well known in the pulp and paper industry, being at present active as a director of the United States Pulp Producers Association. Other activities in Green Bay include Directorships in the Peoples Trust and Savings Company, Green Bay Citizens Loan and Investment Company, the Green Bay Canning Company and the Green Bay Food Company. He was at one time Deputy Commissioner of Banking for the State of Michigan.

In order to expedite the immediate settlement of any commercial or industrial disputes which might delay fulfillment of National Defense contracts and thereby hinder National Defense, the American Arbitration Association is adding to its National Panel of Arbitrators throughout the country.

The Arbitration Association, a non-profit organization with offices in thirty-one of the key cities, has at present over eight thousand leading citizens in more than sixteen hundred cities who are available to act as arbitrators in commercial and industrial disputes. The national offices are located at Rockefeller Plaza, New York.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks, 1941		Corresponding Weeks, 1940	
September 27	105.7	September 28	86.7
October 4	106.7	October 5	85.4
October 11	103.1	October 12	86.2
October 18	104.9	October 19	84.5
October 25	107.5	October 26	85.9
November 1...(Prelim.)	*109.7*	November 2	85.6

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1940	89.1	84.7	82.3	84.3	90.0	92.1	85.3
1941	85.6	89.7	92.2	96.4	98.9	99.5	94.8

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1940	85.1	81.5	85.5	84.9	80.9	85.6
1941	101.8	99.6	*105.6*	...	...	...

COMPARATIVE YEARLY SUMMARIES

	1935	1936	1937	1938	1939	1940	1941
Year to Date..	69.4	79.3	84.2	70.9	81.6	86.1	*96.3*
Year Average..	69.9	80.4	79.8	71.5	83.4	85.6	...

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS †

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1936	62	67	67	70	69	70	69	75	78	82	80	74	72
1937	80	86	86	88	85	77	66	74	69	65	55	45	73
1938	54	60	61	57	58	56	57	66	66	70	65	59	61
1939	60	67	71	69	64	67	63	72	74	84	81	71	70
1940	71	70	69	70	76	79	72	74	72	79	77	71	73
1941	75	81	82	83	84	88	86	94	94	99	..	..	..

Week end. Sept. 27, 1941— 98
Week end. Oct. 4, 1941—100
Week end. Oct. 11, 1941— 99
Week end. Oct. 18, 1941— 98
Week end. Oct. 25, 1941—100
Week end. Nov. 1, 1941— 99

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

OPA Rules on Jobbers

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., Nov. 12, 1941—Payment of jobbers' allowances under the recent amendment to Price Schedule No. 30, Wastepaper Sold East of the Rocky Mountains, by any person other than a consumer of wastepaper is a violation of the schedule and will result in action by the Office of Price Administration, Leon Henderson, Administrator, announced today.

Paper dealers or packers who, although separate business entities, are wholly-owned subsidiaries of consumers, do not fall within the definition established for consumers in Price Schedule No. 30, Mr. Henderson stated. Jobber allowances, therefore, may not be paid by such wholly-owned subsidiaries to waste paper dealers and packers.

OPA also will proceed against jobbers who compute their allowances on a price to which has been added loading or transportation charges, the Administrator said.

The "jobber's allowance" provisions of the schedule are clear and specific, Mr. Henderson stated. Such allowances may only be paid by consumers of wastepaper, and must be calculated upon the actual price paid to the packer for the waste paper, excluding any transportation or loading charges paid by the consumer. Reports have been received by OPA that certain jobbers and dealers are charging allowances to other jobbers and dealers. In some instances jobbers are said to be figuring allowances on a price which includes loading and transportation charges.

'We are looking into these reports," the administrator said. "If they are found to have substance, we shall act against the violators and enforce the schedule strictly."

SIX PROFITABLE WAYS YOU WILL WANT TO USE SANTOBRITE

1. To control slime.
2. To preserve stored pulp lap.
3. To protect stock and size during shutdowns.
4. To treat felts to prevent rotting.
5. To reduce bacterial count on paper and container board.
6. To manufacture mildew-proof board and coated paper.

Santobrite is highly effective in the control of microorganisms which cause impairment of quality and loss of production through slime spots and breaks, blinded wires, clogged felts, obstructed water lines, dirty stock and stock losses from biological decomposition. At present supplies of Santobrite are limited because of the vital need to the Defense Program of materials used in its manufacture.

In the meantime our technical staff is continuing its application research and will be glad to work with you now on your particular problems. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, St. Louis, U. S. A. District Offices: New York, Chicago, Boston, Detroit, Charlotte, Birmingham, Los Angeles, San Francisco, Montreal.

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MONSANTO CHEMICALS
SERVING INDUSTRY . . . WHICH SERVES MANKIND

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Substitute Materials in a War Economy*

By George F. Brady[1]

Abstract

Internal supervision and cooperation of pulp and paper mill managements is essential if they are to avoid intervention by government agencies in the present war economy.

Problems regarding importations of engineering, chemical, and other materials are discussed.

The production of nonessential products for civilian use must be reduced rather than increased.

In considering the subject assigned to me, namely, "Substitute Materials," I have tried to analyze what phases of this subject you would expect to hear discussed by an official of the government. Certainly you would not expect that any governmental office could or should act as a laboratory and engineering department for the thousands of factories in the country to tell them specifically what material to use in a given case to replace something else. The answer, then, must be that the government can only lay down general courses of action and coordinate effort.

Every list of strategic and critical materials that I have ever seen has contained not more than 100 materials. Most of the discussions, magazine articles, and newspaper editorials have been about a much smaller number of materials, such as aluminum, iron ore, manganese, rubber, and tin. But our industrial economy requires at least 5000 fairly important raw materials to keep it operating at a satisfactory balance. Not all of these appear in the final manufactured product; the general public knows little or nothing about most of them, not even the names in many cases; they are used in the processing or in the equipment, or they are changed in form before they are sold with the final product. Just as the statement is true that there would be no chance for the horse to win the race if the nails were missing from one of his shoes, so also is it true that steel mills could not produce *steel,* nor the paper mills *paper,* if the hundreds of little items of supply were cut off. It takes much more than iron ore to produce iron. The other day we were confronted by the fact that in copper production it takes a ton of selected hardwood for every 300 tons of copper produced. These hardwood poles are used in poling the copper in refining; they are consumed in the process, and there is no other readily available substitute. Another example, the Army and Navy Munitions Board has had on its critical list for many years the item of cattle hides; but you cannot make Army shoes out of cattle hides alone. You must have tanning materials from South America and the Far East, cod oil from Iceland to soften the leather, wax from Brazil to waterproof and finish it, wood pulp to make the paper and boxes, starch from Java to make the glue for the boxes, and a great number of other materials. In fact, practically every part of the world has been called upon for the materials that produce and process those shoes.

Materials from Foreign Countries

A fundamental before the problem of substitution is tackled is the consideration of supply of the originally-planned material. We must try first to maintain and increase the supply. Then, if there is still danger of a shortage, we must try to allocate the available supply into the most needful channels of use.

Our raw materials come either from domestic sources or from foreign countries. Militarily inclined nations are always advocates of the doctrine of self-sufficiency. We are not a militarily-inclined nation, but nevertheless we have always had a very considerable number of economists and politicians who believe in and fight for the doctrine of self-sufficiency. This minority has often been so vociferous that it sometimes gives the impression of importance, but I am sure that the vast majority of Americans do not want to cut this nation off from the rest of the world. Certainly the present Administration, in many published statements, has made it clear that we need materials produced by other nations and that we want to share ours with them.

The United States contains only 7% of the population of the world, but it consumes 72% of the silk production of the world, 70% of the rubber, 36% of the coal, 48% of the coffee, 53% of the sugar, 42% of the pig iron, 47% of the copper, and 69% of the petroleum. The purchasing power of the 132,000,000 people of the United States is greater than that of the 500,000,000 people of all Europe, and much greater than the more than one billion people of Asia. When the Nonintercourse Act was passed and tried out unsuccessfully more than a century ago much of the population of the United States lived in such a simple manner that it did not require the many foreign products to meet everyday needs; but today, there is no American family that would not be violently shaken in its everyday life by a stoppage of a thousand and one foreign commodities whose very names they often do not even know.

* Presented at the Fall Meeting of the Technical Association of the Pulp and Paper Industry, Ann Arbor, Mich., Sept. 16-19, 1941.

[1] Coordinator for Import and Substitute Materials, Civilian Supply Division, Office of Price Administration, Washington, D. C.

As civilization has moved upward, and the creation and production of the things that make up the so-called "standard of living" has advanced, the need for greater and greater diversity of raw materials has increased at a tremendous rate. It is the struggle for these raw materials, characterized too often in the international markets by sharp practices, exactions, and finally aggressions and retaliations, that has been the principal factor in the international hostilities and wars of the past century. We have been able to avoid these conditions among our own states because of the free intercourse among the states and because of the fairly even balance of production conditions, prices, and marketing customs. But it is hardly common sense on our part to continue to deceive ourselves with the idea that we can avoid suspicions, jealousies, and hostilities if our 7% of the population of the world locks itself into a fenced economy wherein we are able to pay our own workmen $10 a day for producing a raw material that we pay a workman in China only 20 cents a day for producing.

As the drain on the supplies of the many raw materials has been accentuated during the past few months to the point where we have had to look around for added supplies and for substitute materials this condition of economic affairs has been brought to the attention of the everyday men of industry more and more. Only yesterday, as it were, these matters were the concern only of the politician and diplomat. Today they are the vital concern of the technical men of the producing industries. The intense shipping shortage of this war, and the fact that so many areas of the world open to us in the last war are now closed to us, have awakened us to the realization that our industrial civilization depends upon continuous supplies of thousands of diverse materials, not merely of a few materials listed as military necessities that some call strategic. These materials come from ores, earths, woods, leaves, roots, sea life, animal life, from every climate and condition of the world, and it is being brought more and more to our attention that we must give the workers of the other nations a chance to live decently while producing them for us.

I have said that before we consider the question of substitutes comes the search for added supplies. While it is recognized that equipment designers are always looking for new materials and making substitutions frequently, it is true also that the materials generally used in any given product are the result of long and careful selective analysis. From experience we know that where sudden changes have to be made because of shortage of supply the result is too often a lowering of the standard of the article. We must, therefore, try to foresee possible shortages and plan to make the shift gradual. For example, we use 15% Turkish tobacco in our cigarettes. The American public does not like a full "Virginia" cigarette as the English do. We have fairly good stocks of Turkish tobacco in the country, but the amount of cargo space that we can foresee for Turkish products is small. It would be better therefore to reduce the percentage of Turkish blend to 10% right now and thus stretch out the stocks than it would be to go ahead with business as usual and suddenly have no Turkish tobacco for blending.

Commodity shipping requirements are prepared by the defense agencies in Washington for the use of the Maritime Commission in seeing that those materials most urgently needed are brought in from foreign ports first, and in seeing that the quantities of imported materials are balanced so as to avoid a surplus of one material and a shortage of another. With the aid of the regular governmental agencies that have representatives in the various countries new and nearer sources of raw materials are sought out; and if it needs money or technical assistance to develop them, recommendations are made to the proper authorities for such assistance.

Let me take an example to indicate the kind of planning that we have been trying to do to insure supplies and to obtain substitute or alternate materials. We normally require about 100 million pounds of tung oil from China for paint and varnish manufacture. It became apparent early last spring that we could not possibly get the required amount over the only route open to us, namely, the Burma Road through the port of Rangoon. Meetings were held with all concerned. We asked the Brazilians to increase the quantities of castor beans, and we asked various manufacturers to increase the capacities for dehydrating castor oil and for fractionating soybean and fish oils. We also asked for increased importations of oiticica oil from South America. From all these sources we believe that we have avoided an acute shortage of paint oils that might have occurred.

Another example that illustrates how allocation must sometimes be used to prevent shortage is that of menthol. When the menthol supply was cut off from Japan we called together the manufacturers of synthetic menthol together with the importers of the raw material—citronella. The type of citronella required for making menthol comes from Java. We ascertained the quantities of menthol that would be needed for domestic consumption and for the lend-lease program, and found that we would have to ask for a tripling of the manufacturing capacity. Then, because the supply of citronella would be only sufficient for the menthol production it was necessary to see that all that was imported should go to the manufacturers and not be diverted to other uses. Citronella Java is normally used for the manufacture of perfumes. It is split into two products, citronellal and geraniol. The citronellal is what is needed for menthol, but it is also the product normally used for making lilac perfumes. The geraniol is used for rose perfumes. We had to say that the makers of lilac perfume would have to look for some other raw material, but the soapmakers and the perfumemakers could have all the rose perfume they wanted from the byproduct geraniol.

Effect of War Economy on the Pulp and Paper Industry

In very few cases have industries such as the paper industry gotten together to plan what their shortages might be in the future and how to meet those shortages with a coordinated effort. If we had had industry committees from the beginning this might have been done. I have always felt that some sort of cooperative effort of this kind would save much grief and be in the public interest. But to my knowledge any effort of this kind has been limited to the very basic essential materials, in your case merely the pulp supply.

In the paper industry I do not have to remind you that you cannot make paper merely with pulp. First, you must have the metals, tools, and repair parts to keep your plants in operation. Then, you must have

the processing materials, the chlorine and other chemicals, the casein and starches, and other finishing materials, and you must have the filler materials and the foreign oils and pigments for printing and lithographing. There is also certain expendible equipment of which you must be assured a continuous supply, such as the bronze wire cloth and the wool felt.

You can plan easily for the basic raw material, pulp, because your whole industry needs are well known and the material is fairly generally limited to your single industry as a consumer. But practically all of the other materials without which you could not use pulp are not limited to your industry. In fact, you are in competition with hundreds of other industries for the supply. If your individual industry members have to go out and fight for a share you are meeting in the market tens of thousands of other manufacturers with all kinds of arguments to get their requirements. Some one figured that if all manufacturers in the country had to present their individual claims in Washington on all orders for scarce materials no less than 40 million certificates of priority per month would have to be reviewed by the government.

It is my personal opinion that if the materials situation continues to tighten for another six months as it has during the past six months there will be a decided slowing up of production unless each industry will plan carefully its needs so that these needs can be coordinated with the requirements of other industries, and then a specific rating be given the whole industry based upon a definite production.

Full War Economy

When I say that the requirements must be based upon a definite production I mean that it is idle folly for the industries of this country to assume that they can continue to build up production to meet an ever increasing civilian demand when this nation is in a deadly economic competition with a group of nations that are sacrificing civilian needs to a bare minimum in order to produce war supplies with which to overwhelm us. Go out to any of the stores of this city and you will be able to buy any kind of paper in any quantity for any silly use as freely as you want to. We need metals and rubber and hundreds of processing materials to produce aircraft and guns, but you can go out and buy freely toys and luxury household equipment of all kinds of fancy gadgets that are being made in huge quantities from these same materials. One toy factory increased its production ten times in the last two years. We certainly cannot beat Hitler by doubling the production of Chinese checker boards and roller skates.

What every industry like your own should face, therefore, on a cooperative basis is the following:

1. Analysis of all basic and processing materials required for the entire industry, including quantities, grades, stocks on hand, etc.
2. Separation of this list of material into domestic and imported, so that recommendations can be made for increase in domestic production facilities, or substitution for import shortages.
3. Analysis of the possibilities of changing to substitute or alternate materials, domestic or from more accessible foreign ports.
4. A pooling, or at least an industry cooperation, in the laboratory research for other materials or processes to overcome the difficulties in production due to shortage of materials.
5. Cooperative study to recommend that the Government set definite production limits on nonessential or luxury civilian items so that the available materials will be used for the most essential needs.

There is one more important phase which belongs to the general public and the consuming industries rather than to the particular producing industry, and that is the economy of use of the industry's product. As stated by the Supply Priorities and Allocations Board in its first news release to the public last week, "We must forego the less essential that we may have an abundance of the more essential." In other words, the time has come when the general public must cut down wastage and even do without some things in order that more of the important items can be made with the available materials.

Industry Internal Cooperation or Government Supervision

The first item listed is self-evident, and this study should be made by all industries without loss of time. It should be a 100% cooperative job, and not merely a trade association job. If the industry is afraid that it will be prosecuted for conspiracy under the anti-trust laws, then it should request the defense agencies to supervise the work.

The second is also important and should be self-evident. If it is necessary to increase productive capacity, construction materials and machinery will be needed, and these can only be gotten by getting priority ratings from the proper government agencies. But there is always a chance that new supplies of imported materials, or alternate materials, from nearer sources can be obtained. In times of emergency like the present it is to the advantage of all that the over-all needs be known at the outset and the change planned as a unit. There may be political reasons that affect the war economy. Take the case of the tapioca that the paper industry needs as a finishing material and as a glue. Normally we import more than 200 thousand tons of this material from the Dutch East Indies. The sale of that much material has a deep effect on the economy and on the shipping of the East Indies. If we cut it off in normal times it would usually be by gradual steps for which compensations could be made by shifts in the economy. But in war time if a sudden withdrawal came in the market the economic distress caused might have a very serious result on the whole war situation. Actually, in this case we have sought for increased importations from Brazil and the West Indies, and we have called for substitutes from domestic starches, but we planned with the proper political authorities for gradual reductions in the imports from the east so as to cause as little disturbance as possible to the political situation.

Then again, where a rapid shift is advisable to a substitute material from another nearer country, it may be necessary to have a definite statement of total requirements so as to set the machinery officially in motion in that other country for a planting of the raw material and assembling of the labor for production. Such was the case when we foresaw a drop in the imports of Indian burlap and wanted the Brazilians to increase their production more than three times.

Less Secrecy, More Cooperation

Research for new materials is normally the business of individual companies, and often the work is

kept secret as between companies. But in these times of emergency every industry should work their company laboratories at top speed always thinking in advance of what the shortages may be next month or next year. There should be less of the secrecy, and *more cooperative meetings of the technical men among the different companies* with the idea of saving duplication of effort. As far as possible a pooling of research within the industry would save a tremendous amount of work and would result in quicker changes and probably better work.

I have said before that I did not believe any major war could be won by trying to add the war effort on top of an ever increasing civilian load. In this emergency we have not yet insisted that the civilian population make any real sacrifices. The retail sales of the nation have kept mounting because the workers have had more to spend and have been demanding more and more luxury products.

In Germany, in Italy, and in Japan the civilian population has tightened its belt and sacrificed all luxuries and cut down on even what we call essential supplies so as to concentrate effort on the production of war material. Besides their own resources these countries now have the shipbuilding capacity and the materials resources of France, Scandinavia, and other countries that were not with them in the last war. We know that in the past the greatest asset that Hitler has had has been the careless sense of security of the democratic nations. The public of these nations acted just like the everyday man who cannot believe that death may strike him down tomorrow. Others may die, but not him. It is inconceivable.

Production of Nonessentials

If your industry persists in believing that it can continue to call upon the public to increase its sales of paper products, you are making the same mistake that France made and that England was making. I do not believe that all luxuries should be abandoned, but I do believe that the time has come when the industries of this nation should consider definite stopping points in this great increase in production of nonessentials. The industries should not wait for the man in the street to act, which would have the same effect as a buyers' strike and leave many firms in an unplanned and helpless position not conducive to orderly economic production of the most necessary products.

This country is certainly the most extravagant nation on earth. We use two sheets of paper where one would do. We pick up a sanitary paper drinking cup, that has taken a good grade of paper and valuable waxes, and after one little drink we throw it away. The amount of advertising leaflets, booklets, posters, and full-page advertisements that require paper and oils and pigments and labor, we throw around almost indiscriminately. I, myself, throw away at least a basketfull every day, and I am only small fry in this great game of propaganda wastage.

Pulp is now being consumed at the rate of 880,000 tons a month. This is more than 15% higher than the 1939 rate of consumption, and at that time we were getting 15% of our supplies from Scandinavia from which the supply is now cut off. Think of that as a sudden load of 30% on the economy of this country and Canada, at a time when we want to turn our attention to a war effort. Little of this extra load is going to "Defense." Recent figures tell us that the demands for glue from the paper trade have more than doubled, and we are certainly not fighting a war with gummed tape as even less than 20% goes into such items as corrugated boxes for packing. We do not believe in a policy of limiting production in ordinary times, nor is any industry now free to get together as a unit to limit the production; but these are unusual times, and where necessary in the public interest an industry can limit production of nonessentials on an order from the government.

Without a definite production scale for your industry you cannot plan the needs for raw materials for your industry. The economy measures that are set forth in the so-called conservation programs of picking up the scrap are child's play along side of the savings that can be made by a real economy program of savings at the source by sacrifice, or doing without some things so that most of the production facilities and labor of the country be concentrated on building up the needed products to make our nation strong and mighty.

Kalamazoo TAPPI Discuss Pulping

The November meeting of the Kalamazoo Valley Section of the Technical Association of the Pulp & Paper Industry was held at the Park-American Hotel on Thursday evening, November 6. Fred L. Chappell, Jr., Sutherland Paper Company, presided as chairman.

The guest speaker of the evening was Mark W. Bray, of the U. S. Forest Products Laboratory, at Madison, Wis. Mr. Bray described the development of the southern pulp industry and presented various problems in connection with the manufacture of both soft and hard wood pulps. He also explained the work that the Forest Products Laboratory is doing to overcome some of these difficulties through the utilization of southern woods and showed ways of increasing yield and quality of southern pulp in order that that branch of the industry might contribute its share to the increased demand for pulp as the result of the war.

The members and guests present at the meeting were A. W. Ayles, Mark W. Bray, N. J. Berger, Fred L. Chappell, Jr., A. W. Cole, Jack Dickson, F. D. Elliott, Paul de Guehery, R. A. Diehm, H. B. Freeman, R. D. Freeman, F. B. Hamilton, W. F. Hathaway, Myron Kin, Howard McCoy, Martin J. Roberts, H. E. Stafford, E. B. Taylor, W. S. Taylor, R. M. Upright, R. W. Vankirk, Joe Waber, and Arthur Weinland.

H. G. Noyes' Services Appreciated

RUMFORD FALLS, Me., November 10, 1941—Harold G. Noyes, personnel director at the Oxford Paper Mill here, who presided at the weeklong institute of paper manufacturing problems held at Mechanics Institute recently, was given a coffee table in appreciation of his services, by the 21 representatives of mills in the eastern part of the country, gathered here.

Philip A. Bachelder, of the S. D. Warren Paper Company, Westbrook, made the presentation.

Mr. Noyes, besides presiding at the classes, which met morning, afternoon and night throughout the week, was one of the three instructors who presented case problems for discussion by the group.

The sessions were intensively carried out, touching on all phases of the paper industry. It was one of several meetings to be held throughout the country.

Maintenance Paints and Protective Coatings*

By A. R. Olsen[1]

Abstract

Corrosive conditions in the manufacture of pulp and paper are severe and no one engineering material —metal, nonmetal, or paint—is resistant to all the conditions which prevail. .Parlon,[2] a chlorinated rubber-base paint, gives excellent protection in many instances to pulp and paper mill equipment. Paints and protective coatings are in the class with other engineering materials and therefore careful studies should be made before application to obtain the limit of efficiency and protection.

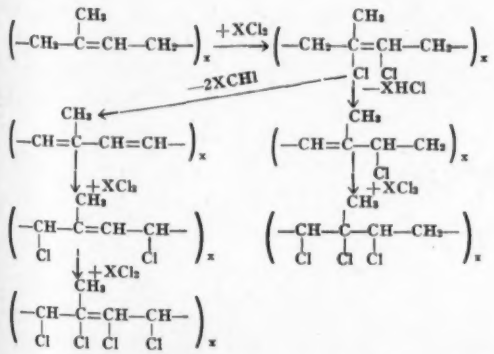
Parlon,[2] a chlorinated rubber-base protective coating, is prepared by dissolving a specially treated, pale crepe rubber in a solvent and passing chlorine gas through the solution until chlorination is complete (about 66 to 68% chlorine by weight). Upon completion of chlorination, the chlorinated rubber is precipitated, washed, dried, packed (dry, white powder), and sold to paint and varnish manufacturers who formulate it into finishes to meet the use requirements.

Chemistry of Chlorinated Rubber

The halogens react directly with rubber to form an interesting series of compounds with properties intermediate between those of rubber and the brittle natural resins. On the basis of the structure of the rubber molecule, chlorine could add directly to the unsaturated bond giving a chloro-hydrocarbon containing 51% chlorine:

In practice, however, both addition and substitution occur inasmuch as hydrogen chloride is evolved, and the product obtained contains more chlorine than the above equation would indicate.

Kirchhof suggested that the initial addition compound loses HCl and the chlorine then reacts on the newly found unsaturated hydrocarbons. The reaction can be considered as taking place in the following stages:

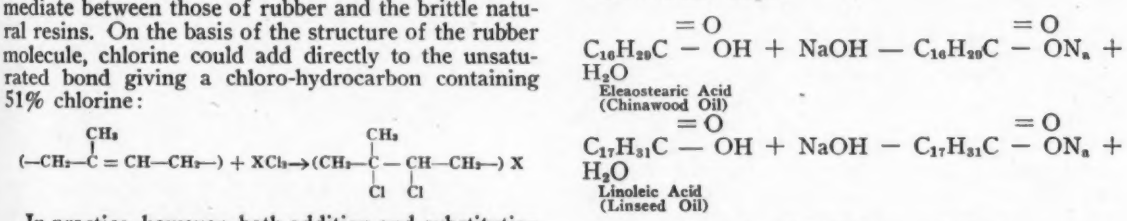


This last material $(C_5H_6Cl_4)_x$ corresponds to a chlorine content of 68%. The second phase of the reaction $(C_5H_7Cl_3)_x$ corresponds to a chlorine content of 61.5%; therefore, combinations of these two products would result in a product of varying chlorine content. In general a product of 66 to 68% chlorine is obtained, which corresponds approximately to $(C_{10}H_{13}Cl_7)_x$ which is a combination of the two products.

As would be expected from the above formula it is unaffected by practically all corrosive chemicals. Because Parlon cannot be used without modification with resins and plasticizers it is important that the modifying agents also have good chemical resistance. Included in the best plasticizers and resins are chlorinated diphenyls, special heat-bodied Chinawood oil, coal tar derivatives, and soft phenolic resins. These finishes can be formulated with a wide range of pigments and inerts to give any desired color.

These paints differ from ordinary maintenance paints in that Parlon is the film-forming ingredient in paints made from it while vegetable oils or varnishes containing vegetable oils are the film-forming ingredients in ordinary paints.

Vegetable oils react readily with sodium hydroxide which is prevalent in pulp and paper mills to form water-soluble soaps:



Eleaostearic Acid (Chinawood Oil)

Linoleic Acid (Linseed Oil)

Service Conditions and Tests

The results of an actual test on a commercial chlorinated rubber-base paint vs. a commercial varnish-base paint both designed for concrete floors showed that the varnish-base paints saponified after only two weeks while the chlorinated rubber-base paints were still in excellent condition after six months. This saponifiication or failure of ordinary paints on concrete is, of course, not limited to floors or walls in paper mills, but can occur on any concrete floor especially if new or below grade.

For acid-resistance this paint is unaffected and gives excellent protection to metal surfaces due to the resistance to permeability of acid solutions and fumes. Acid does not attack a varnish-base paint as readily as do the alkalies but being more permeable than chlorinated rubber-base paints allows the acid to penetrate through the paint film and attack the metal with subsequent formation of hydrogen which pushes the paint film off from the back.

Tests have recently been completed comparing a commercial chemical-resistant paint with the chlorinated rubber-base paint for resistance to various corrosive liquids encountered in pulp and paper mills. The results are given in Table I.

Based on similar test data accumulated over the last eight years there have been many actual applications of these corrosion-resistant paints in pulp and

* Presented at the Fall Meeting of the Technical Association of the Pulp and Paper Industry, Ann Arbor, Mich., Sept. 16-19, 1941.

[1] Hercules Powder Company, Wilmington, Del.

[2] Trade name of a product of the Hercules Powder Company.

TABLE I.—RESULTS ON PARTIAL IMMERSION OF FINISHES IN PULP MILL LIQUIDS

Test Solution	Commercial Dark Gray PARLON Inside Finish no. 246-34	Commercial Gray Fumeproof Enamel
Sodium hypochlorite sol. 2.7 g. available Cl/liter	Unattacked 1 week (end of test period).	Failed in less than 24 hours.
Sulphite pulping liquid Ca base 5.8% total SO_2 1.2% combined SO_2	Slight attack in less than 24 hours. (Due to pin holes).	Slight attack in less than 24 hours.
Kraft pulping liquor Contains 4% NaOh 4% Na_2S	Unattacked 1 week (end of test period).	Bad blisters in 2 hours.
Chlorine water Saturated solution	Film wrinkled in 24 hours.	Film wrinkled above solution in 24 hours. When removed from test, portion of film immersed alligatored and peeled.
Soda pulping liquor 8% NaOH solution	Unattacked 1 week (end of test period).	Bad blisters in 2 hours.
Tap water	Unattacked 1 week (end of test period).	Slight discoloration 1 week.
Drying time Tack free	20 minutes	Slight tack after 24 hours.
Hard	8 hours.	

Test strips were immersed after airdrying seven days after application of second coat.

paper mills. There are also a number of paint manufacturers who have specialized in chemical resistant finishes based on Parlon. One of the leading manufacturers of paper mill equipment uses this paint for protection against corrosive conditions in paper mills. Liquid alum tanks have been in service for five years protected with this paint and are still in good condition. In the same mill located in Pennsylvania stock lines were painted inside and out and after two years the paint shows no wear at all.

One point of interest is that a different paint manufacturer's Parlon product was used in each of the above mills.

Painting Preparation

In order to obtain good results, the proper preparation of the surface before painting is as important as choosing the right paint and applying it properly. The following instructions were taken from the prelude of a painting schedule worked up by a paint manufacturer for a pulp and paper mill.

"X-Brand Parlon-base coatings are highly specialized materials which are definitely indicated for use in your plants to resist the action of fumes and spills of the chemical solutions. To obtain this protection and to reduce maintenance costs. it is essential that the following facts be carefully observed:

Facts to be Observed

"1. A satisfactory paint must be used and be applied in sufficient number of coats as recommended herewith to insure ample film thickness.

"2. Before application of the paint, all steel surfaces must be first thoroughly cleaned, preferably sand blasted, free from all deposits. Paint immediately after sandblasting. Wood surfaces to be thoroughly wirebrushed. This is important, otherwise early failures will occur.

"3. Full continuous coats must be applied free from voids."

Another independent investigator of these paints for pulp and paper mills made the following recommendations: "Experience has indicated the great importance of exceedingly careful application of the paint. For satisfactory results it is necessary to clean metal surfaces until all traces of scale, rust, grease, and pitch are removed. Sandblasting would probably be the ideal method of preparation. The second important requirement is that sufficient time be allowed for a thorough drying of each coat. A drying time of 24 hours between coats is recommended for the most satisfactory results."

It is important to allow several days drying at room temperature before submerging these finishes in liquids. This is to allow the last traces of solvent to leave the film which is necessary to obtain a hard impervious finish. One important limitation of chlorinated rubber-base paints is the poor resistance obtained when submerged in liquids at temperatures over 140 deg. F. Continuous submersion at lower temperatures gives satisfactory results. Chlorinated rubber-base paints are limited to temperatures below 200 deg. F. dry heat for continuous exposure.

Every paint is a compromise and several different formulations are necessary to meet satisfactorily all the various corrosive conditions encountered in a pulp and paper mill. For example, paint for exterior structures should be designed for good weathering durability and resistance to atmospheric corrosive conditions, (dust, dilute alkali chlorine gas, etc.), while a paint for interior equipment must be formulated with maximum resistance to the corrosive conditions encountered and exterior durability is not a factor. Different formulations are needed for painting wood, steel, or other surfaces to obtain the best adhesion and durability.

Conclusion

It can be concluded that chlorinated rubber-base paints are satisfactory for pulp and paper mill maintenance painting based on actual results in mills as well as experimental tests.

At the present time there may be some difficulty in obtaining chlorinated rubber-base paints due to the defense demand but sufficient material is available from the paint manufacturers so that you can run your own tests now on certain areas in your plant where paint maintenance has been a problem.

Hybrid Poplars*

By Phelps Vogelsang[1].

Abstract

The growth of hybrid poplars in experimental field plots and the research involved in making selections of suitable commercial types through the sample plot method are discussed. The study includes checking on mortality, growth rate, disease and insect resistance, plant habits, and chemical and physical analyses of the wood.

Plant breeding is a comparatively old subject and there has been a vast amount of work accomplished

* Presented at the Fall Meeting of the Technical Association of the Pulp and Paper Industry, Ann Arbor, Mich., Sept. 16-19, 1941.

[1] Research Forester, The Dow Chemical Company, Midland, Mich.

in the agricultural and horticultural fields; however, plant breeding or cross pollination of forest trees is practically a new and unexplored field. The first large scale program of tree hybridization was initiated not more than fifteen years ago. This program was started with the objective to produce a tree or a number of trees that would help to bolster the production of wood suitable for pulp manufacture. At that time there seemed to be a great demand for such a tree. Today we still believe there is that demand.

Objectives of Program

The objectives of that tree breeding program were: to produce a tree that has good pulping qualities, maintains rapid growth, that would be disease- and insect-resistant, and that can be established at low cost and on lands that do not regenerate tree growth naturally. Because of its inherent qualities as a pulping specie and the existence and availability of adult flowering specimen, varieties of poplars have been used quite extensively in these cross pollination experiments. At the present time quite a number of forest stand improvement projects which employ hybridization practices are in progress in this country. Unfortunately, such work with the slower growing hardwoods and conifers is a long and tedious procedure and the possible benefits to be derived from successful crosses may not be determined for some years. With the poplar crosses the annual growth is much more rapid and, therefore, results in growing this material can be determined in comparatively few seasons.

There have been a number of publications written explaining the procedure and techniques involved in cross pollinating forest trees. As these techniques are quite generally well known, this speaker believes that a sequence to this story, or the actual growing and results obtained in the field may be of more interest to this audience.

Plot Method

The Dow Chemical Company has initiated a program of testing many true varieties, as well as hybridized types of forest trees by the sample plot method. Although we have planted out quite a number of native hardwood specie, most of these have failed because of poor, light soil conditions and we are now working only with conifers and hybrid poplars. The plot method, in short, involves a comparative study of each specie or variety when planted on a uniform plot of ground and treated in a similar manner. In order to determine the suitability of any variety of tree to be used for pulp wood production, the following outline of qualities and characteristics must be determined: 1. Optimum climatic requirements. 2. Optimum soil requirements. 3. Growth. 4. Survival. 5. Habit of the tree. 6. Treatment and care required. 7. Disease resistance. 8. Insect resistance. 9. Rodent repelling qualities. 10. Rooting ability of the cuttings. 11. Storing qualities of the cuttings. 12. Pulping qualities of the wood, such as color, density, fiber length, cellulose and lignin content.

Location of Plots

The sample plots are located on various types of soil and in varying localities in the country so that the optimum climatic conditions and soil requirements may be determined. Many clonal varieties winter-kill or are severely stunted by the cold winters of Michigan but grow very well in southern climates. Each variety of tree has its optimum soil requirement and we find that one variety may do well on dry sand but is a total failure on wet clay, or vise versa. This requires that we distribute our plots to include a large range of soil types. We have found that a large majority of the poplar hybrids prefer light soils that are well drained. Although, when planted on extremely dry sands, the growth will be retarded until the time when a firm root system is established and the tree shades the ground which helps to conserve moisture. When heavy competitive grass growth is left adjacent to the tree the growth will be retarded until the tree begins to shade out such growth.

Rapid Growth Most Desired

Rapid growth is one of the most essential characteristics desired in a pulp wood specie. The individual or private company is not interested in planting forest lands if they have to wait 30 to 40 years before a return can be realized, but, if the cutting cycle can be reduced to from 6 to 12 years, a great many people, especially farmers, are interested in growing trees on otherwise nonproductive lands. In comparative growth studies, we find that the hybrid poplars are far better growers than any of the native varieties and will do quite well on lands that will not support native growth. In commercial type plantations, we are recording an inch per day average growth in height on some hybrid varieties during their first season, and average growths of 10 feet during the second and third seasons.

All of the hybrid poplar varieties are propagated from cuttings which are made from first-year wood. Vegetative propagation insures offspring of true character and therefore has a distinct advantage over seed grown specie. Survival of the plants and rooting ability of the cuttings go hand in hand as most of the first season's death rate is usually due to poor root initiation. When cuttings are planted while the weather is quite warm the exposed buds will start growing within a day or so. If roots do not form very soon after the buds break, the top will die from lack of moisture and thus kill the cutting. In some cases, we have found it advisable to treat cuttings of some varieties with a root hormone before planting. In some instances the survival has been increased from 84 to 97% by using this treatment. In several other varieties root initiation is adequate and better than 99% of the plants will survive. Better rooting is obtained if the cuttings are made in the fall and stored upside down in moist sterile sand over winter. Freshly made cuttings, however, can also be planted with good results. It is essential that the cutting be dormant when planted in the spring as heavy mortality will result if the roots or leaves should start growing before planting time. To insure dormancy until planting time cuttings are usually kept in a cold storage cellar.

Special Attention During Storage

All types of cuttings require special attention during storage as a high death-rate can occur if precautions are not taken. The temperature in the cellar should be kept just above freezing. A freezing temperature may kill the cuttings and a high temperature will cause them to break dormancy. Precautions also must be taken to keep the storage medium sterile less the cuttings become infected with fungi and rot. The sand also should be kept only slightly moist as too

much moisture will water-soak the cuttings, or if too dry, the cuttings will dry and lose vitality. A moisture content of the sand such that the cutting will neither absorb or evaporate moisture is optimum. Regardless of precautions, some types of cuttings will not survive storage and such types must be planted from fresh stock.

Habit of Tree Important

The character or habit of a tree is of considerable importance in selecting a commercial type. A plant that has many side branches and is of brushy habit is hardly desirable even though these side branches can be shaded off during the growing period. Clear lengths of bolt wood without knots is desired and tree types that will produce this are preferred.

The fact that poplar varieties will produce coppice growth or sprouts from the stump or root system of a previously harvested tree is of decided advantage in producing a second crop. Hybrid poplars produce many fast growing sprouts of this kind. These sprouts can be allowed to grow until they completely shade the ground and then thinned to the desired spacing and left to grow on. In this way a second crop can be produced in a shorter time than it took the first crop to grow.

Field Treatment

In carrying on an experimental project of this kind, considerable time is spent in determining the proper field treatment to use that will give the best results with vigorous plant types and under a variety of field conditions. Poplars respond very rapidly to either good or poor treatment so that it is essential to determine the proper methods to follow. For example, when a plantation is to be established on a site where considerable competitive grass growth exists, it is advantageous to plant the trees at close spacing so that they will shade out this grass growth as soon as possible. Perhaps, however, the soil is too poor and too dry to support trees at close spacing and another solution is necessary. In this instance it is probably best to plow and cultivate the site for the first season and thus give the trees a vigorous start so that they can carry on and overcome the competition. Trees that are badly stunted for several seasons are very apt to become infected with disease and insects and thus fail entirely.

We are now growing poplars on a number of abandoned farm sites that have a soil of poor sandy quality and covered with heavy grass which is infested with harvest mice. Trees planted in this grass are usually damaged by mice the first winter. Those plants that are not actually killed will resprout the following season, making a many stemmed bushy type of plant which is undesirable. Wherever the mouse population is heavy it is advisable to plow and cultivate or poison the mice the winter previous to planting. After the first season the plants are not usually bothered by mice as they will have formed heavy bark. The application of rodent repellants to the trees is usually expensive and not as effective as cultivation.

Size and Selection of Cuttings

The size and selection of the cuttings or scions to be planted is of equal importance if the plants are to do well the first season. Cuttings made from main stem shoots and of ½ inch or better in diameter, have far more vitality than side branch cuttings or those of small diameter. Cuttings that are 12 inches or more in length are superior to shorter ones. Where a single stemmed tree is desired the cuttings are planted deep enough so that only the top bud remains above the ground surface. If more buds are exposed, more stems will be produced. The top bud which is to be exposed must be in a healthy condition, otherwise several sprouts will come from below the surface making a bushy type tree.

Disease and Insect Studies

Disease and insect studies must be carried on continually in an experimental program of this kind. It has been our practice to grow new clonal varieties in a nursery area for at least two seasons before they are planted in field plots. During this trial period observations can be made on disease and insect resistance. These trial trees are planted at close spacing so that the foliage will become dense and thus give optimum conditions for fungus growth. During warm, moist periods the plants are inoculated with the ascospores of the canker fungi and the leaves are treated with the spores from the poplar rust. This inoculation is usually made under a humidity tent to insure perfect conditions. The canker ascospores are applied in a water suspension by using a hypodermic needle or by drenching a freshly made wound in the bark. In this way the possibility of infection is increased and infections are produced in a short time. Only in this manner could susceptabilities be studied without waiting years for natural infections to occur.

Those insect pests most seriously affecting hybrid poplars are the round headed poplar borer and the poplar leaf beetle. In some seasons the black aphid may be found on young plants but the plants outgrow this stage quickly and little damage is done. The leaf beetle also attacks younger plants and is of relatively little importance. The poplar borer usually attacks the tree after it has become infected with canker or is in a sickly condition from other causes. Proper care and the removal of infected trees are the best methods of control. We have found some hybrids that appear to be immune to borer attack. Those varieties of trees that are seriously infected with disease during the nursery trials are eliminated as it would be impossible to grow these trees successfully in commercial plantations.

Pulping Qualities

The pulping qualities of a wood to be used for cellulose production is of major importance in a study of this kind.

In order to determine the physical and chemical properties of the wood of these various plants, a standard of analysis has been made up. This analysis covers such properties as color of the wood which governs to some extent the bleaching qualities, the density of the wood which is important to production, and length of fiber which governs strength of sheet. Although the hybrid poplars have a rapid growth, we find that the wood is quite dense. The wood contains a higher percentage of alpha-cellulose than the native aspens. Hybrid poplars grow at a fairly even rate during most of the growing season and this accounts for a high percentage of summer wood which is high in fiber and low in lignin. In a study of fiber lengths that was made at the Forest Products Laboratory, it has been determined that the fibers of most of the hybrids are somewhat longer than those of our native aspens.

Use of Gypsum in the Kraft Process*

By Otto Kress[1] and Wm. H. Aiken[2]

Abstract

A study has been made of the factors involved in the use of gypsum for a part of the salt cake in the kraft recovery process. Gypsum can be reduced to calcium sulphide in the same temperature range that sodium sulphate is reduced to sodium sulphide. The rate of reduction of the sodium salt is faster than that of gypsum, but the time for maximum reduction is the same in both cases. Conversion of calcium sulphide to sodium sulphide can be accomplished by adding a sufficient quantity of sodium carbonate to the carbon-gypsum mixture before reduction.

Green liquor prepared from the reduction of gypsum with carbon in the presence of sufficient sodium carbonate to produce a liquor containing after causticizing, two parts of sodium hydroxide and one part of sodium sulphide can be readily causticized, and the rate of settling of the sludge is the same as for a liquor made under normal mill conditions.

Gypsum should not be admixed with black liquor but should be introduced into the furnace in dry form.

Through the use of gypsum, white liquors of higher sulphidity can be prepared than through the use of salt cake, and the sulphidity can be raised more rapidly if this is desirable.

The economics of the use of gypsum are discussed.

Introduction

In the kraft (sulphate) recovery process approximately 300 pounds of commercial sodium sulphate—commonly known as salt cake—are added as make-up chemical for each ton of pulp produced.

It was the purpose of this investigation to determine some of the factors involved in using gypsum to replace, in part, salt cake in the kraft recovery process. Factors of importance that were considered in this investigation were the following: (1) the feasibility of reducing calcium sulphate to calcium sulphide with carbonaceous material; (2) the ease of converting calcium sulphide to sodium sulphide by means of sodium carbonate present in the furnace smelt; (3) the possible difficulties in filtering or settling sludges in the causticizing operation; (4) the influence of sodium sulphide prepared from gypsum upon the rate of settling of impurities present in the green liquor; (5) the effect of the lime produced from the gypsum causticizing in part the green liquor, thereby reducing the amount of lime that must be added for causticizing; and (6) the effect of substitution of black liquor for black ash for the reduction of gypsum.

A survey of the chemical literature shows no published record of attempts to use gypsum to produce sodium sulphide; however, several investigators *(1-10)* have studied the reduction of calcium sulphate to calcium sulphide.

If gypsum is to be used to replace salt cake in the kraft recovery process, its reduction to calcium sulphide must occur in the same temperature range as the reduction of salt cake to sodium sulphide, and the time of reduction of the two sulphates must be approximately the same, in order that the equipment now in use for reduction of salt cake may be used for the reduction of gypsum. Furthermore, such factors as the decomposition of calcium and sodium sulphides at elevated temperatures, the conversion of calcium sulphide to sodium sulphide by the sodium carbonate present in the black liquor or black ash, etc., were determined. The causticizing of the green liquor produced, made by using gypsum, in part, to replace salt cake, is of interest from the standpoint of the efficiency of the conversion of the sodium carbonate, the causticizing value of the lime produced from the calcium sulphide in the furnace, and the settling rate and character of the lime mud produced.

Material

Calcium sulphate in the form of gypsum and anhydrite were obtained through the courtesy of the United States Gypsum Company. The analyses of these two products are given in Table I.

TABLE I.—ANALYSES OF GYPSUM AND ANHYDRITE

	Gypsum %	Anhydrite %
Total water	18.95	5.73
Free water	5.73	2.45
Combined water	13.22	3.28
Silica	3.80	.73
Iron and aluminum oxides	.82	....
Calcium	21.93	27.30
Magnesium	....	.18
Sulphate	54.82	66.55
Total	100.32	100.49
Calcium sulphate (calculated from sulphate content)	72.6	94.4

Estimation of Calcium Sulphide

A sample of C.P. calcium sulphide was obtained for checking a method of determining calcium sulphide; however, it was found that the C.P. sample contained much sulphate due to oxidation, and that it continued to oxidize on standing. The sulphide content of the C.P. calcium sulphide was determined by an evolution method, and compared with the similar value estimated by direct titration method, using a sample of calcium sulphide taken at the same time. The two methods checked within 1% which was considered accurate enough for this investigation.

The direct titration procedure was as follows: The reduced gypsum-carbon mixture, suspended in 500 cc. of distilled water, was treated with an excess of 0.1 *N* iodine solution, 50 cc. of 1:1 hydrochloric acid were added, and the mixture was stirred for 10 minutes. The excess iodine was titrated with 0.1 *N* sodium thiosulphate solution, using starch as the indicator, and the end point taken as the point where no further color developed after 30 minutes of stirring. A blank was run on 3.5 grams of carbon that had been heated to 1705 deg. F. for one hour. It was found that 0.111 cc. of *N* iodine solution was left adsorbed on the carbon at the end point. The direct

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titration method (with allowance for the blank) was used on the first set of reductions, but it was found to be undesirable, because it is time consuming and the amount of iodine adsorbed on the carbon decreases with increasing temperature during reduction, as more carbon is burned out at the higher temperatures.

Because of the difficulties encountered in the direct titration method, the evolution method was used in the later reduction experiments for the determination of the sulphide formed. This was first checked against C.P. sodium sulphide ($Na_2S \cdot 9H_2O$), whose sulphide content had been estimated by direct titration. It gave results that were accurate to within 0.4%. The method is as follows: The reduced gypsum-carbon mixture in 300 cc. of distilled water was treated in a 500-cc. Erlenmeyer flask with 30 cc. of concentrated hydrochloric acid. The contents of the flask were boiled for 15 minutes, and the hydrogen sulphide evolved was caught in two 250-cc. Erlenmeyer flasks. The first flask contained 60 cc., and the second flask 20 cc. of a solution made up of 20 grams of cadmium chloride ($CdCl_2 \cdot 2H_2O$) and 300 cc. of concentrated ammonia per liter. The contents of each flask were made up to 150 cc. with distilled water. After the 15-minute evolution period, the cadmium sulphide precipitates from both flasks were filtered on the same filter paper, washed once with water, and the filter paper and its contents transferred to a 250-cc. beaker; 50 cc. of water and a few drops of phenolphthalein were added, the precipitate stirred into the water, and the solution neutralized with 0.2 *N* hydrochloric acid. An excess of 0.1 *N* iodine solution and 30 cc. of 1:1 hydrochloric acid were added, and the mixture was stirred for 10 minutes. At the end of this time the excess iodine was titrated with 0.1 *N* sodium thiosulphate solution, using starch as the indicator.

Technique of Preparing Calcium Sulphide

Two samples of gypsum were mixed and covered with carbon in a small porcelain crucible and heated for 1 hour at 1720 deg. F. At the end of this time one crucible was plunged into water, care being taken to keep the open side down to avoid loss of the hot sulphide into the air, and one was allowed to cool in air. The sulphide contents of both samples were determined by the direct titration method. The sample cooled in water showed 95.2% reduction, whereas the one cooled in air showed 32.6% reduction; therefore, in all subsequent reductions the samples were cooled by plunging into water. Comparative experiments with porcelain, alundum, iron, and nickel crucibles showed that porcelain crucibles should be used for the reductions.

Effect of Variables on the Degree of Reduction

Temperature of Reduction

In order for gypsum to replace salt cake in the kraft recovery process successfully, it must be reduced to calcium sulphide in the temperature range in which sodium sulphate is reduced to sodium sulphide. Samples of sodium sulphate and gypsum were given the same treatments at definite temperatures to determine their relative ease of reduction. In order that the titration amounts on the cadmium sulphide produced from the two in case of complete reduction would be approximately the same, 0.5-gram samples of gypsum and 0.3-gram samples of sodium sulphate were used.

The technique of the reduction was as follows: a 0.5-gram sample of gypsum was mixed with 0.5 gram of ground charcoal in a 30-mm. porcelain crucible. On top of the gypsum-carbon mixture were placed 3 grams of powdered charcoal, and a cover was placed on the crucible. In a similar manner, a 0.3-gram sample of sodium sulphate was mixed and treated with charcoal and the crucible covered. Both crucibles were placed in a muffle furnace at a definite temperature for 1 hour. The temperature in the furnace was taken after 30 minutes heating with an optical pyrometer by focusing the pyrometer on the peep hole in the door of the furnace. At the end of an hour the door of the furnace was opened, the top removed from one of the crucibles while it was still in the furnace, and the crucible immediately plunged into 500 cc. of distilled water in an 800-cc. beaker. The sulphide content was then determined by the direct titration method. The results of these determinations are given in Column I of Table II. The results were checked by preparing and heating the samples exactly as given above. In this case, the crucibles were plunged into 300 cc. of water, and the sulphide content determined by the evolution method. The results of these determinations are given in Column II.

These results show that the calcium sulphide produced by reduction of calcium sulphate by using 3.5 grams of carbon to 0.5 gram of sulphate is more stable than sodium sulphide produced by reduction of 0.3 gram of sodium sulphate under similar conditions. The calcium sulphide lost only 6% at 1930 deg. F., and 24% at 1987 deg. F. The sodium sulphide is less stable under heat, with a loss of 28% at 1830 deg. F., and a further progressive loss at increasing temperature, so that at 1987 deg. F. a total of 70% was lost.

These results indicate that gypsum can easily be

TABLE II.—REDUCTION OF GYPSUM AND SODIUM SULPHATE WITH 3.5 GRAMS OF CARBON

Temperature, °F.	Reduction, %			
	Gypsum		Sodium Sulphate	
	I	II	I	II
1465	35.0	...	43.3	...
1503	51.3	51.0	47.2	46.9
1577	97.2	97.4	92.1	92.3
1667	97.2	...	86.7	...
1705	...	97.3	...	81.6
1745	96.5	96.7	78.6	78.4
1852	95.2	...	74.0	...
1932	93.6	95.0	72.3	72.7
1952	...	74.7	...	53.0
1987	68.4	65.7	26.6	27.6

reduced to calcium sulphide in the same temperature range that salt cake is reduced to sodium sulphide, and a higher yield may be expected from the gypsum.

Amount of Carbon to be Used

To determine the extent of reduction and decomposition with an excess of carbon present, a series of reductions was carried out in the following manner: Samples of 0.5 gram of gypsum and 0.3 gram of sodium sulphate were mixed with 1 gram of carbon and covered with 6 grams of carbon, the crucibles covered and heated for 1 hour. At the end of this time, the crucibles and their contents were plunged into 300 cc. of distilled water, and their sulphide contents were determined by the evolution method. Two different series of determinations were made in the same manner. The results of these determinations are given in Table III.

The results of Tables II and III indicate that, with an excess of carbon present, higher yields of

both calcium sulphide and sodium sulphide are obtained than when a lesser amount of carbon is used. The yield of calcium sulphide is higher than that of sodium sulphide. Under mill conditions, there is always a large excess of carbon present in the smelter, and high yields should be expected.

Time of Reduction

To substitute gypsum for salt cake in the kraft recovery operation, without the use of added equipment, the time of reduction of gypsum to calcium sulphide must be approximately the same as the time of reduction of salt cake to sodium sulphide.

TABLE III.—REDUCTION OF GYPSUM AND SODIUM SULPHATE WITH 7.0 GRAMS OF CARBON

Temperature, °F.	Reduction, % Gypsum I	Gypsum II	Sodium Sulphate I	Sodium Sulphate II
1385	10.8	11.1	37.3	37.7
1465	18.0	19.1	56.1	56.2
1485	43.2	...	92.6	...
1503	...	46.1	...	94.4
1577	100.1	99.5	97.2	97.4
1667	100.0	...	97.2	...
1705	...	99.9	...	97.5
1789	98.1	97.9	94.4	94.6
1862	94.5	94.1	92.9	92.6
1898	91.6	...	84.6	...
1932	...	89.2	...	87.2
1987	78.1	79.9	85.6	85.5

To determine the time required to reduce gypsum and sodium sulphate, 0.5-gram samples of gypsum and 0.3-gram samples of sodium sulphate were mixed with 1 gram of carbon, covered with 6 grams of carbon, the crucibles covered, and heated at 1667 deg. F. for 10, 20, 30, 40, 50, 60, and 120 minutes. At the end of the heating periods, the crucibles were quenched, and the sulphide contents determined by the evolution method. The results given in Table IV show that the rate of reduction of sodium sulphate to sodium sulphide is faster than that of gypsum to calcium sulphide; however, the time for maximum reduction is the same in both cases.

TABLE IV.—RATE OF REDUCTION

Time, min.	Reduction, % Gypsum	Sodium Sulphate
10	...	9.5
20	8.3	63.8
30	54.5	87.5
40	69.8	91.6
50	83.4	95.6
60	99.6	96.5
120	99.6	96.5

Decomposition of Sodium Sulphide on Heating

The results of these determinations confirm the findings of other investigators *(1, 3, 4, 7, 8)* that calcium sulphide decomposes at high temperatures. They indicate that sodium sulphide is more subject to breakdown than is calcium sulphide, especially when a large excess of carbon is not present. To determine the decomposition products of sodium sulphide in the presence of carbon, a 0.3-gram sample of sodium sulphate was mixed with 0.5 gram of carbon, covered with 3 grams of carbon, the crucible covered, and heated to 1952 deg. F. for 1 hour, when the crucible and its contents were plunged into water. The carbon was filtered from the solution, and one fifth of the filtrate was titrated with 0.1 *N* hydrochloric acid to the phenolphthalein and methyl orange end points to determine the hydroxide and sulphide content of the solution. The sulphate content of the titrated solution was determined by precipitating with barium chloride solution and weighing the ignited residue of barium sulphate. The following products were found: sodium sulphide, 51.13%; sodium hydroxide, 45.51%; sodium sulphate, 2.85%.

The results of these investigations indicate that the caustic present in green liquor is produced by decomposition of sodium sulphide.

Conversion of Calcium Sulphide to Sodium Sulphide

As it was proved by laboratory experimentation that calcium sulphide cannot be readily converted to sodium sulphide by treating with sodium carbonate solution, experiments were made by heating solid sodium carbonate and calcium sulphide. One gram of gypsum was mixed with 3.3 grams of sodium carbonate and 1 gram of carbon. This mixture was covered with 3 grams of carbon, the crucible covered, and heated in the furnace for 1 hour at 1740 deg. F. At the end of the hour the crucible was quenched, the contents of the crucible stirred into water, the whole mass transferred into a 500-cc. volumetric flask, 50 cc. of 20% barium chloride added to precipitate the carbonate, and water added to fill the flask up to the mark. The mixture was allowed to settle, and 100 cc. of the supernatant liquid were withdrawn for titration with 0.1 *N* hydrochloric acid to the phenolphthalein and methyl orange end points. The results, corrected for the alkalinity produced by the action of the carbonate on the crucible, were as follows: sodium sulphide, 76.60%; sodium hydroxide, 22.35%.

These results indicate that calcium sulphide produced by the reduction of gypsum with carbon may be easily converted to sodium sulphide by mixing an excess of sodium carbonate with the gypsum-carbon mixture before reduction.

Causticizing

The settling rate and final volume of the sludge produced by causticizing green liquor prepared from gypsum heated with carbon and an excess of sodium carbonate were compared with the settling rate and final volume of the sludge produced by causticizing a liquor prepared from pure sodium sulphide and pure sodium carbonate.

Twelve grams of sodium carbonate and 5 grams of gypsum were mixed with 5 grams of carbon, covered with 15 grams of carbon, the crucible covered and heated at 1734 deg. F. for 1 hour. At the same time a covered crucible containing 9 grams of carbon and 6.85 grams of C.P. sodium sulphide ($Na_2S \cdot 9H_2O$) mixed with 5 grams of carbon and covered with 15 grams of carbon was heated in a like manner. If all the gypsum were converted to sodium sulphide, the solutions of the two ignited samples should have the same composition. The samples were quenched in water, boiled to dissolve the sodium carbonate, and the carbon removed by filtration. The filtrates were made up to 1 liter with distilled water, transferred to 2-liter round-bottomed flasks, and heated to 175 deg. F. Six grams (110%) of 88% calcium oxide were added to each flask, and the solutions boiled for 30 minutes. The suspensions were then poured into liter graduates and the rates of settling were found to be practically the same for the two. The titration of the supernatant liquid showed that each solution contained about 78% of sodium sulphide.

A check run was made exactly as above, with the

exception that 1705 deg. F. was used as the reduction temperature, and 7.7 grams (110%) of 90% calcium hydroxide was used. A 0.5-gram sample of the sludge from each graduate was dried in an oven at 105 deg. C. and dissolved with 20 cc. of 1:1 hydrochloric acid. Both sludges contained 1% calcium sulphate.

The causticizing was repeated in a more concentrated solution in the following manner: 15 grams of gypsum and 27 grams of sodium carbonate were mixed with 15 grams of carbon, covered with 25 grams of carbon, and heated in a covered crucible at 1645 deg. F. for 1 hour. The crucible and its contents were quenched, the carbon filtered off, and the filtrate evaporated to 140 cc. This gave a solution of 50 grams of sodium sulphide and 150 grams of sodium carbonate per liter. A blank was prepared in the same way, using 18 grams of sodium carbonate and 18.5 grams of C.P. sodium sulphide ($Na_2S \cdot 9H_2O$). One hundred cc. of each solution were heated to boiling, 14 grams (110%) of calcium hydroxide added, the solutions boiled 30 minutes, poured into 100-cc. graduates, and the rates of settling noted; they were practically identical.

These results indicate that green liquor prepared from the heating and reduction of gypsum with carbon in the presence of sufficient sodium carbonate to produce a liquor containing, after causticizing, 2 parts of sodium hydroxide and 1 part of sodium sulphide can be readily causticized, and that the rate of settling is the same as for a liquor made under normal mill conditions.

Addition of Gypsum to Black Liquor

In order to determine if gypsum might be added to black liquor so that it might be sprayed into the modern spray-type recovery furnace, tests were made with black liquor and gypsum. Five grams of gypsum were added to 50 cc. of black liquor (32.5 deg. Bé. at 35 deg. C.) in a test tube, and the tube allowed to stand a few minutes. A light brown precipitate settled out. The rate of settling of the precipitate was accelerated both by dilution of the black liquor and by heating the thick black liquor. Calcium chloride solution, lime water, and gypsum solution gave precipitates similar to that obtained with the solid gypsum. Because of this precipitation, gypsum should not be admixed with black liquor but should be introduced into the furnace in the dry form.

Green liquor prepared by the reduction of calcium sulphate had the usual greenish color comparable to commercial green liquor. Similar colored green liquor was obtained by the reaction of C.P. calcium sulphide and sodium carbonate under heat. In both cases this green color was occasioned by the presence of colloidal iron sulphide.

Conclusions

Gypsum can be reduced to calcium sulphide in the same temperature range that sodium sulphate is reduced to sodium sulphide, and a higher yield is obtained in the case of calcium sulphate. At higher temperatures and with reduced amounts of carbon, calcium sulphide is more stable than sodium sulphide.

Kraft green liquor always contains sodium hydroxide. It seems unreasonable that sodium hydroxide present in the black liquor could pass through an old-fashioned or a modern recovery system without being converted to sodium carbonate, because in both systems the liquor, ash, and smelt are constantly in contact with carbon dioxide. The results of these investigations indicate that the caustic present in green liquor is produced by decomposition of sodium sulphide.

The rate of reduction of sodium sulphate to sodium sulphide is faster than the rate of reduction of gypsum to calcium sulphide; however, the time for maximum reduction is the same in both cases.

Conversion of calcium sulphide to sodium sulphide can be secured by adding sodium carbonate in sufficient amount to the carbon-gypsum mixture before reduction.

Green liquor prepared from the heating and reduction of gypsum with carbon in the presence of sufficient sodium carbonate to produce a liquor containing, after causticizing, two parts of sodium hydroxide and one part of sodium sulphide can be readily causticized, and the rate of settling of the sludge is the same as for a liquor made under normal mill conditions.

Through the use of gypsum some saving will be made in the amount of lime used to causticize the green liquor, as the calcium carbonate produced by the interaction of the calcium sulphide and sodium carbonate is burned to lime. In proportion to the amount of calcium sulphate used, there will be an equivalent saving in lime.

Gypsum, in view of its reaction with black liquor, should not be admixed with the black liquor but should be introduced into the furnace in the dry form.

Through the use of gypsum, white liquors of higher sulphidity can be prepared than through the use of salt cake, and the sulphidity can be raised more rapidly if this is desirable.

Under the market conditions at the time this report was prepared, the results of this work indicate that gypsum can be substituted for salt cake when the price of the former is $5 per ton, and the price of the latter is $17.40 per ton. For anhydrite at a cost of $5.50 per ton, an economy would result if the delivered price of salt cake exceeds $16.50 per ton. These figures are predicated on a further cost estimate of soda ash of $20 per ton and for reburned lime at $6 per ton. In view of the higher calcium sulphate content of anhydrite and its lower silica and iron contents, this material should be more advantageous than gypsum and would have further advantage because of the absence of foreign material in the reburning of the lime mud.

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Imports of Paper and Paper Making Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard; Bleached Sulphite More Acute—Some Grades of Old Waste Lower.

Effective September 30, 1939, under Treasury Decision 49,970, all publications, exchanges and trade associations were denied access to import manifests at the New York Customs House. The Paper Trade Journal and other interested parties have vigorously protested this ruling, and as soon as the order of the Treasury Department is modified or rescinded, full publication of all manifests will be resumed in these columns. In the interim, the Paper Trade Journal is making every possible effort to gather all available information from manifests, at various outside sources.

NEW YORK IMPORTS

WEEK ENDING NOVEMBER 8, 1941

SUMMARY

Cigarette paper ..... 46 cs.
Newsprint ..... 11,570 rolls
Filter paper ..... 21 cs.
Drawing paper ..... 3 cs.
Carbon paper ..... 33 cs.
Decalcomania paper ..... 101 cs.
Tracing cloth ..... 42 cs.

CIGARETTE PAPER

Kuenzle & Streiff, ——, Barcelona, 36 cs.
Garcia & Diaz, ——, Barcelona, 10 cs.

NEWSPRINT

N. Y. Daily Mirror, ——, Botwood, 286 rolls.
——, ——, Comeau Bay, 7,508 rolls.
Perkins Goodwin & Co., ——, Botwood, 502 rolls.
H. G. Craig Co., Inc., ——, Donnacona, 350 rolls.
——, ——, Liverpool, N. S., 2,226 rolls.
Price & Pierce, Ltd., ——, Botwood, 348 rolls.
H. G. Craig Co., Inc., ——, Donnacona, 350 rolls.

FILTER PAPER

H. Reeve Angel & Co., Inc., ——, Liverpool, 21 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., ——, Liverpool, 3 cs.

CARBON PAPER

——, ——, Liverpool, 33 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., ——, Liverpool, 82 cs. (duplex), 7 cs. (simplex).
——, ——, Liverpool, 12 cs.

TRACING CLOTH

——, ——, Liverpool, 42 cs.

RAGS, BAGGINGS, ETC.

National City Bank, ——, Buenos Aires, 2 bls. rags.
——, ——, Liverpool, 13 bls. rags.
——, ——, Bombay, 49 bls. paper stock.
——, ——, Bombay, 215 bls. cotton waste.
Padawer & Co., ——, Bombay, 150 bls. cotton waste.
W. Girtner, ——, Bombay, 100 bls. cotton waste.
Green Textile Associates, ——, Bombay, 100 bls. cotton waste.
New England Waste Co., ——, Bombay, 150 bls. cotton waste.
Bunge North American Grain Corp., ——, Recife, 226 bls. cotton linters.
Schimmel Trading Co., ——, Recife, 130 bls. cotton linters.
Lush Cotton Products Co., ——, Recife, 48 bls. cotton linters.
W. R. Grace & Co., ——, Guayaquil, 15 bls. cotton linters.

GLUESTOCK, ETC.

Edmond J. Lang, ——, Montevideo, 30 bls. glue stock.
——, ——, Liverpool, 630 bags hide cuttings.
T. W. Dunn Co., ——, Montevideo, 89 bags hide glue.
T. W. Dunn Co., ——, Montevideo, 100 bags glue.
Transatlantic Animal By-Products Corp., ——, Montevideo, 104 bags glue.

CASEIN

Eugenio Lang, Inc., ——, Buenos Aires, 417 bags.
J. H. Schroeder Banking Corp., ——, Buenos Aires, 1,250 bags (unground).
——, ——, Buenos Aires, 50 bags (lactic).
Chemical Bank Trust Co., ——, Buenos Aires, 417 bags (ground).
——, ——, Buenos Aires, 167 bags (rennet).
Antolini & Co., ——, Buenos Aires, 50 bags (ground).
American British Chemical Supplies, ——, Buenos Aires, 417 bags (ground).

WOOD PULP

Cellulose Sales Co., ——, Botwood, 1,336 bls. dry sulphite, 100 tons.
L. Hershman & Co., ——, Botwood, 1644 bls. dry sulphite, 124 tons; 1,320 bls. wood pulp, 100 tons.

Arbitrate Royalties on Containers

[FROM OUR REGULAR CORRESPONDENT]

FULTON, N. Y., November 10, 1941—Federal Judge Crouch is hearing an arbitration of differences between the Oswego Falls Corporation, this city, and John C. Donnelly and Winfred C. Allen, of New Rochelle, joint owners of a patent covering a cellophane lined paper container for packaging purposes. The controversy was started this week at the Onondaga County, Syracuse. Mr. Donnelly is an inventor and an interest in his patent is held by Miss Allen, an attorney. He claims that his invention was brought to the attention of the Oswego Falls Corporation and its subsidiary, the Sealright Company, Inc., in 1934 and a contract was made through which he did experimental work in the field of packaging containers for about eighteen months. Under another contract made in 1936 he declares his employment was renewed at $150 a month and he was to receive royalties on containers made under his invention. He claims that the Sealright concern has been manufacturing containers covered by his patent and royalties are due him. A number of containers were produced before the arbitrators while the inventor was testifying at the opening hearing. The defendant claims that the corporation has never manufactured any containers in violation of the patent and the inventor was to receive royalties only if containers were made under his patent and sold. Those manufactured by the defendant were declared as coming under an entirely different patent it held.

Loans Yacht to Coast Guard

Robert McC. Johnstone, president of the Johnstone Engineering and Machine Company, Downington Pa. has loaned his 45 foot twin-screw, sea going yacht the *Three Bees*, to the U. S. Coast Guard. It is understood that the yacht will be used for patrol work in the Delaware River and Delaware Bay. The home port of the *Three Bees* was formerly at the Huguenot Yacht Club, New Rochelle, N. Y., of which club Mr. Johnstone has been a member for many years.

New York Paper and Pulp Market Review

Paper and Pulp Markets Strong Under Continued Heavy Demand —Manila Rope Higher This Week—Old Bagging Prices Decline— OPA Maximum Price Schedule On Waste Paper Well Maintained.

Office of the PAPER TRADE JOURNAL,
Wednesday, November 12, 1941.

Continued heavy demand in the wholesale paper market for the major lines of paper and paper products, is indicated in reports received from many manufacturers, representatives, jobber, and general paper merchants during the current week.

The very large purchasing by the government for all purposes has created an unusual market situation. The extensive comment on scarcity and possible curtailment for civilian uses, has contributed to the large-scale purchasing of paper. All together, an unprecedentedly large volume of orders have been filled and booked by the paper industry and trade. From current indices the trend of this heavy production and consumption will continue while the all-out defense program is in effect.

The index of general business activity rose to 127.6% for the week ended November 1, from 126.9% for the preceding week, compared with 113.6% for the corresponding week last year. Paper board production was fractionally higher.

Paper production for the week ended November 1 was estimated at 109.7%, compared with 85.6% for 1940, with 98.4% for 1939, with 82.4% for 1938, and with 56.0% for the corresponding week for 1937.

Paper board production for the week ended November 1 was 99.0%, compared with 80.0% for 1939, with 66.0% for 1938, and with 56.0% for the corresponding week for 1937.

September production of paper was 29.6% above that of the like month last year. According to preliminary figures of the government, the total domestic paper production for 1940 was 14,483,709 tons, which is somewhat higher than estimates within the industry made at a relatively early date.

Total production for the third quarter of 1941 was 1,559,894 tons, compared with 1,275,257 tons for the same period last year.

Imports of paper, all grades, for the eight months of 1941 totaled 915,508 tons, compared with 1,866,020 tons for the like period last year.

Exports, all grades, for the eight months of 1941 aggregated 334,876 tons, compared with 418,276 tons for the like period last year.

Exports of paper are now subject to a license under Export Control Schedule No. 25, in effect November 11, 1941.

Prices of paper are well stabilized in the wholesale paper markets, with reoccuring reports in some quarters of a few cases of irregularity in prices to consumers. In general, however, the paper trade reflects a sound condition. The OPA directive prices are reported as well maintained in paper board.

Chemical Pulp

Demand for chemical wood pulp continues heavy. Contract prices are firmly maintained, with spot prices determined solely by agreement between buyer and seller.

Production for September, 1941, all grades except bleached sulphate, was higher than for the preceding month, although the index figure for September was below the peak of the year reached in June, 1941.

Imports, all grades, totaled 109,831 tons for August, 1941 compared with 90,501 tons for July, a gain of 21.4%.

Exports were lower. August, 1941, exports totaled 19,554 tons, compared with 35,387 tons for July, a decrease of 44.7%.

Imports of pulpwood for August, 1941, totaled 263,059 cords, compared with 195,395 cords for July, an increase of 34.6%.

Rags

Prices are firmly maintained on the higher grades of new cotton rags. The lower grades are less active, with some quarters of the trade expecting a downward revision from prevailing quotations, if and when, the OPA issues maximum prices on roofing rags. No important price changes on any grade of rags have been reported at this date.

Old Rope and Bagging

Old rope prices are strongly maintained at this date, with some prices higher. Foreign and domestic Manila rope is currently quoted at from 6.50 to 6.75.

A decline in mill buying of scrap bagging has resulted in lower prices this week on domestic gunny, currently quoted at from 4.00 to 4.25, and on bright bagging, quoted at from 3.50 to 3.75.

Old Waste Paper

OPA maximum prices on 34 grades of waste paper are now in effect. Prices are reported generally in the trade as well maintained.

Twine

Twine prices are firm. No important changes have been reported this week on any grade of hard or soft fiber twine. This market is active and demand reported heavy in all major grades.

L. McMaster Gets Pacific Coast Post

The American Wringer Company, Inc., Woonsocket, R. I., manufacturers of Tensilastic rubber rolls and other rubber products have appointed Leonard McMaster as their Pacific Coast representative to succeed Walter S. Hodges, deceased.

Spaulding Fiber Co. Gets Contract

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., November 10, 1941—Among contracts announced by the OPM office as awarded by the War Department was one of $19,036.83 to the Spaulding Fiber Company, Rochester, N. H., for faceforms.

West Virginia Pulp and Paper Company

230 Park Ave.
New York

35 East Wacker Drive
Chicago

Public Ledger Building
Philadelphia, Pa.

503 Market St.
San Francisco, Cal.

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CORAGUM
FOR CORRUGATING

WRITE...

Corn Products Sales Co.
17 BATTERY PLACE
NEW YORK CITY

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, November 12, 1941.

BLANC FIXE—Prices on blanc fixe are firm and unchanged and conform to prevailing market levels. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is currently quoted at $60 per ton, f.o.b., works. Demand reported good for the week.

BLEACHING POWDER—Quotations on bleaching powder are firm. Demand reported active for the week. Bleaching powder is currently quoted at $2 per 100 pounds, in drums, at works.

CASEIN—Prices on casein are firm, under a good demand for the current week. Standard domestic casein, 20-30 mesh, is currently quoted at 28 cents per pound; 80-100 mesh, at 28½ cents per pound. All prices in bags, car lots. Argentina casein, 20-30 mesh, is currently offered at 21 cents per pound. No quotations on French casein.

CAUSTIC SODA—Quotations on caustic soda are firm and continue unchanged at prevailing market prices. Demand reported active. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.70 per 100 pounds, in drums, car lots, at works.

CHINA CLAY—Prices on china clay are firm and conform to prevailing market levels. Demand reported good at this date. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay at from $12 to $22 per ton, at mines. Imported clay is currently offered at from $13 to $25 per long ton, ship side.

CHLORINE—Quotations on chlorine are firm and unchanged. Government demand heavy. Market under mandatory priority ruling. Chlorine is currently quoted at from $1.75 to $2 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported firm for the week with prices higher on some grades. "G" gum rosin is currently quoted at $2.47 per 100 pounds, in barrels. Savannah. "FF" wood rosin is currently quoted at $2.47 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is quoted at $2.97 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm and unchanged. Demand active. Domestic salt cake is currently quoted at $15 per ton, in bulk; chrome cake at $16 per ton. All prices in car lots, f.o.b., shipping point. The quotation of $16 per ton imported salt cake is nominal.

SULPHATE OF ALUMINA—Quotations on sulphate continue to conform to prevailing market levels. Demand reported active for the week. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are firm and are reported unchanged for the current week. Pearl is currently quoted at $3.10 per 100 pounds; powdered starch at $3.20 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Demand reported good for the current week. The commercial grades are currently quoted at $1.15; iron free at $1.85 per 100 pounds. All prices in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and conform to prevailing market levels. Annual contracts are currently quoted at $16 per long, f.o.b., mines. Spot and nearby car lots are quoted at $18 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mines. No quotations on imported talc.

MARKET QUOTATIONS

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Delivered Zone A			
Northern, Extra Quality	$5.25	@$6.00	
Superstandard	4.87½	" 5.25	
Northern Standard Wrapping	4.50	" 5.00	
Standard Wrapping	4.50	" —	
Tissues—Per Ream—Carlots			
White No. 1	1.07½	" —	
White No. 1 M. G.	.97½	" —	
White No. 1½	.85	" —	
White No. 2	.85	" —	
Anti-Tarnish M. G.	.90	" —	
Colored	1.00	" —	
Kraft	.90	" —	
Manila	.80	" —	
Unbl. Toilet, 1 M.	4.14	" —	
Bleached Toilet	5.60	" —	
Paper Towels, Per Case—			
Unbleached, Jr.	3.80	" —	
Bleached, Jr.	2.30	" —	
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	8.75	@10.75	
No. 1 Manila Wrapping, 35 lb.	5.50	" 5.75	
No. 2 Manila Wrapping, 35 lb.	5.25	" 5.50	
Boards, per ton—			
News	48.00	@ —	
Chip	48.00	" —	
Sgl. Mia. LL Chip	60.00	" —	
White Pat. Coated	75.00	" —	
Kraft Liners	60.00	" —	
Binders Boards	80.00	" —	

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$40.25@$47.25	$41.40@$48.50
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	32.20 " 37.75
75% Rag	24.75 " 29.00	25.90 " 30.50
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—
White, Assorted Items.
Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$10.55@$12.75	$11.70@$14.25
No. 2	9.65 " 11.75	10.80 " 13.25
No. 3	9.20 " 11.25	10.35 " 12.50
No. 4	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—
White, Cased Paper.

Delivered in Zone 1:

No. 1 Glossy Coated	$13.05@$14.75
No. 2 Glossy Coated	11.80 " 13.50
No. 3 Glossy Coated	11.00 " 12.50
No. 4 Glossy Coated	10.60 " 12.00
No. 1 Antique (watermarked)	10.25 " 11.75
No. 2 Offset	9.60 " 11.00
A Grade E. F.	9.35 " 10.75
A Grade S. & S. C.	9.60 " 11.00
B Grade E. F.	8.85 " 10.25
B Grade S. & S. C.	9.10 " 10.50
C Grade E. F.	8.50 " 9.75
C Grade S. & S. C.	8.75 " 10.00
D Grade E. F.	8.25 " 9.50
D Grade S. & S. C.	8.50 " 9.75

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—	
Moist	No prices
Dry	No prices

(Delivered)

No. 1 Domestic and Canadian	40.00	@42.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—		
Prime Bleached Sulphite	3.62½	@ 4.75
Prime Qualities—		
Easy-Bleaching Sulphite	3.17½	" 4.25
Strong Unbleached Sulphite	3.17½	" 4.25
News Grade, delivered		
Unbleached Sulphite	63.75	" 67.75

(On Dock, Atlantic Ports)

Kraft Bleached	4.12½	" —
Kraft Light & Strong	No price	
Kraft No. 1	3.60	" 4.75

(F. o. b. Pulp Mill)

Kraft Domestic and Canadian	3.00	" 3.50

(Delivered)

Soda Bleached	3.30	" —

Add 60 cents per short ton, does charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	8.00	@ 8.25
Silesias No. 1	4.50	" 4.75
New Unbleached	8.00	" 8.25
Blue Overall	5.75	" 6.00
Fancy	3.00	" 3.25
Washables	2.50	" 2.75
Mixed Khaki Cuttings	2.50	" 2.75
O. D. Khaki Cutings	3.00	" 3.15

Old Rags

White, No. 1—		
Repacked	3.75	" 4.00
Miscellaneous	3.25	" 3.50
White, No. 2—		
Repacked	2.50	" 2.75
Miscellaneous	2.00	" 2.25
Third and Blues—		
Repacked	1.25	" 1.35
Miscellaneous	1.10	" 1.25
Roofing Rags—		
No. 1	1.50	" 1.60
No. 2	1.35	" 1.50
No. 3 (bagging)	.95	" 1.00
No. 4	.90	" .95
No. 5A	.90	" .95

Foreign Rags

All prices nominal

New Rags

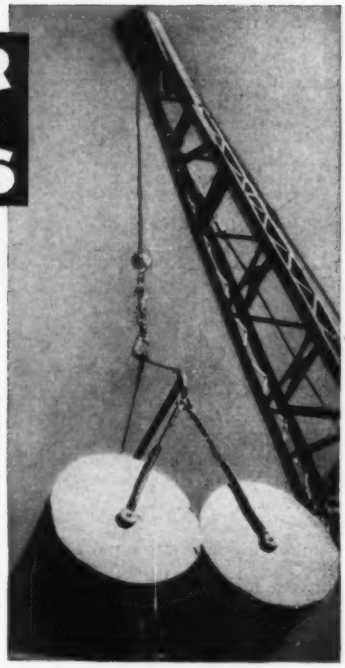
New Dark Cuttings	2.25	@ 2.40
New Mixed Cuttings	2.00	" 2.20
New Light Silesias	5.50	" 5.75
Light Flannelettes	5.50	" 5.75
New White Cuttings	7.00	" 7.50
New Light Oxfords	4.00	" 4.50
New Light Prints	3.00	" 3.25

Old Rags

No. 1 White Linens	7.50	" 8.50
No. 2 White Linens	6.50	" 7.50
No. 3 White Linens	4.50	" —

sonoco

PAPER MILL CORES



RHINO NON-RETURNABLE

For all uses that require an extremely tough, strong, durable product, SONOCO has developed the new RHINO non-returnable paper mill core. Exhaustive tests for breaking and crushing strength and all around toughness indicate its superior qualities.

Returnable Cores
Equipped With
BERMICO* Metal Ends

DURO **is a standard core of plus-standard quality. Made from our own especially manufactured paper stock. DURO cores are made standard 3½" I. D. These cores are equipped with BERMICO open or closed notch, metal ends to fit 3" shaft. TAYLOR Ends that protect inside of core only, can also be specified.**

EN-DURO **a super-quality core to meet extra demands for strength and service where needed. This is our highest grade core. All cores will take either BERMICO or TAYLOR Ends which can be furnished lacquered in various colors for easy identification... Both DURO and EN-DURO cores have a thick kraft surface cover.**

Exclusive distributors
BERMICO (Reg. Trade Mark)
ENDS
and
BERMICO (Reg. Trade Mark)
FIBRE CORES

Strong cellulose fibers are formed into a homogeneous tube and then especially treated to resist all weather and moisture changes. The Bermico Core is light in weight and extremely hard, strong, rugged. These particular cores have exceptionally long life in either returnable or mill roll service.

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. · HARTSVILLE S. C. · MYSTIC CONN.

SHIPPING POINTS: LOWELL, MASS. HARTSVILLE, S. C.

DEPENDABLE SOURCE OF SUPPLY

sonoco
PAPER CARRIERS

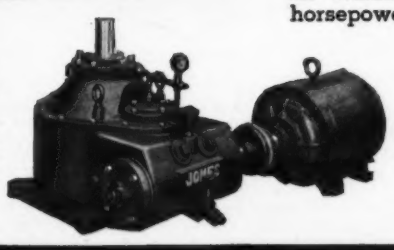
For **driving agitators, mixers and similar equipment—**

JONES WORM-HELICAL SPEED REDUCERS

HERE is a line of machines that fills a long felt need for double reduction units of the fully enclosed type to be used for agitators, mixers, etc. requiring a vertical shaft drive.

Many of these Jones units have established excellent performance records in a wide variety of service. As a result of that experience a complete standard line has been developed covering 15 standard ratios ranging from 40 to 1 to 250 to 1 for all common motor speeds and a wide range of horsepower ratings.

• This Jones Worm-Helical Speed Reducer on a lacquer agitator is typical of the wide range of services for which these drives can be used such as ore roasters, pulp tank mixers, furnaces, bending rolls and similar applications.



The new Jones Bulletin No. 75 covers complete details on these new Worm-Helical Speed Reducers, with rating tables, dimension diagrams, torque charts and other application information. We shall be pleased to send you a copy.

W. A. JONES FOUNDRY & MACHINE CO.
4443 Roosevelt Road, Chicago, Illinois

Jones

HERRINGBONE—WORM—SPUR—GEAR SPEED REDUCERS • PULLEYS
CUT AND MOLDED TOOTH GEARS • V-BELT SHEAVES • ANTI-FRICTION
PILLOW BLOCKS • FRICTION CLUTCHES • TRANSMISSION APPLIANCES

No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	"	4.75
No. 2 White Cotton.	3.25	"	3.75
No. 3 White Cotton.	2.50	"	3.00
No. 4 White Cotton.	1.90	"	2.20
Extra Light Prints..	2.00	"	2.40
Ord. Light Prints...	1.75	"	2.15
Med. Light Prints...	1.55	"	1.95
Dutch Blue Cottons.	2.25	"	2.50
French Blue Linens.	3.00	"	—
Checks and Blues...	2.00	"	—
Linsey Garments....	1.90	"	2.00
Dark Cottons.....	1.50	"	1.60
Old Shopperies.....	1.30	"	1.45
New Shopperies.....	1.45	"	1.50
French Blues.....	2.25	"	2.50

Old Rope and Bagging
(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	4.00	@	4.25
Wool Tares, light....	4.25	"	4.50
Wool Tares heavy..	4.50	"	4.75
Bright Bagging.....	3.50	"	3.75
Manila Rope			
Foreign	6.50	"	6.75
Domestic	6.50	"	6.75
Jute Threads.....	4.00	"	4.25
Sisal Strings.....	2.75	"	3.00
Mixed Strings.....	1.10	"	1.20

Old Waste Papers
(F. o. b. New York)

Shavings—			
White Envelope Cuttings, one cut	*3.37½	@	—
Ordinary Hard White No. 1....	*3.12½	"	—
Soft White No. 1..	*2.50	"	—
Soft White, one cut	*2.87½	"	—
Flat Stock—			
Stitchless	*1.57½	"	—
Overissue Mag....	*1.67½	"	—
Solid Flat Book...	*1.67½	"	—
Crumbled No. 1....	—	"	—
Ledger White Stock.	*2.17½	"	—
Ledger Stock Colored	*1.87½	"	—
Manila—			
New Env. Cut, one cut	*2.87½	"	—
New Cuttings....	*2.65	"	—
Old Kraft Machine Compressed bales..	*1.75	"	—
News—			
No. 1 White News	*1.65	"	—
Strictly Overissue.	*.85	"	—
Strictly Folded....	*.75	"	—
Corrugated	*.82½	"	—
No. 1 Mixed Paper..	*.65	"	—

* OPA Maximum Prices.

Twines
(F. o. b. Mill)
(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp.....	.21	"	—
Fine Polished—			
Fine India.....	.26	"	—
Unpolished—			
Box	.17¾	"	—
Paper Makers.....	.17	"	—
Tube Rope.....	.19	"	—
Wall Paper.....	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope...	.19	"	—
Cotton	.25	"	—
(Hard Fiber)			
Medium Java.....	.18	"	—
Mex. Sisal.....	.16	"	—
Manila	.26	"	—
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Soft Jute Rope.....	5.00	"	5.50
Manila Rope—			
Foreign .....(nominal)			
Domestic	6.50	@	6.75
Jute Carpet Threads.	3.00	"	3.25
Bleachery Burlap....	7.50	"	8.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	6.50	"	6.75
Scrap Sisal.....	3.25	"	3.50
Scrap Sisal for Shredding	3.75	"	4.00
Wool Tares—			
Foreign	(nominal)		
Domestic	5.00	"	5.50
Aust. Wool Pouches.	5.10	"	5.25
New Burlap Cuttings	5.75	"	6.00
Heavy baling bagging	4.75	"	5.00
Paper Mill Bagging..	3.25	"	3.50
No. 2 Bagging.....	.50	"	.60

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	.04½	@	.04¾
Fancy Percales....	.04¼	"	.05
New White No. 1.	.07¾	"	.08
New Light Flannelettes	.06	"	.06¼
Canton Flannel, Bleached	.08¼	"	.08½
Underwear Cutters, Bleached	.08½	"	.08¾
Silesias No. 1.....	.04½	"	.05
New Black Silesias..	.04½	"	.04½
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached....	.08½	"	.08¾
Blue Cheviots....	.04¾	"	.05
Fancy	.01¾	"	.02
Washable	.01¾	"	—
Cottons—According to Grades—			
Blue Overalls.....	.06	"	.06¼
New Black, Soft..	.03¾	"	.04
Khaki Cuttings.....	.02¼	"	.02½
O. D. Khaki.....	.02½	"	.03¼
Corduroy	.02	"	.02¼
New Canvas.....	.05½	"	—
B. V. D. Cuttings...	.07¾	"	.08

Domestic Rags (Old)
(F. o. b. Boston)

White No. 1—			
Repacked	4.00	@	—
Miscellaneous	3.00	"	—
White No. 2—			
Miscellaneous	2.50	"	3.00
Twos and Blues.....	1.75	"	2.00
Old Blue Overalls...	2.25	"	2.50
Thirds and Blues....	1.75	"	—
Miscellaneous	1.25	"	1.35
Black Stockings.....	3.50	"	4.00
Roofing Stock—			
No. 1.....	1.80	"	—
No. 2.....	1.60	"	—
No. 3.....	1.50	"	—

Foreign Rags
(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons.....	(nominal)
Dutch Blues.....	(nominal)
New Checks and Blues	(nominal)
Old Fustians.....	(nominal)
Old Linsey Garments.	(nominal)
New Silesias.....	(nominal)

PHILADELPHIA

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1.	.07¼	@	.07½
New White No. 2.	.04½	"	.05
Light Silesias.....	.04½	"	.04¾
Silesias, No. 1....	.04	"	.04¼
Black Silesias, soft	.03¾	"	.04
New Unbleached..	.07¼	"	.07½
Washable Prints...	.03¼	"	.03½
Washable No. 1..	.02	"	.02¼
Blue Overall.....	.04½	"	.05½
Cottons—According to grades—			
Washable shredding	—	"	.01¾
Fancy Percales....	.03¼	"	.03½
New Black Soft...	.02¾	"	.03
New Dark Seconds	1.75	"	2.00
Khaki Cuttings—			
No. 1 O. D.....	.03	"	.03¼
No. 2 Mixed.....	.02¼	"	.02½
Corduroy	.01¾	"	.02¼
New Canvas.....	.04¾	"	.05¼
New Black Mixed.	—	"	.02½

Domestic Rags (Old)

White No. 1—			
Repacked	3.25	@	3.75
Miscellaneous	3.00	"	3.25
Thirds and Blues—			
Miscellaneous	2.00	"	2.25
Repacked	2.25	"	2.50
Black Stockings (Export)	Nominal		
Roofing Stock—			
Foreign No. 1....	Nominal		
Domestic No. 1...	1.95	"	2.00
Domestic No. 2...	1.80	"	1.85
Roofing Bagging..	1.70	"	1.75

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	Nominal		
Domestic	3.25	"	3.50
Manila Rope.....	5.00	"	5.50
Sisal Rope.....	3.75	"	—
Mixed Rope.....	.75	"	1.00
Scrap—			
No. 1.....	3.75	"	4.00
No. 2.....	1.75	"	1.80
Wool Tares, heavy...	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers
(F. o. b. Phila.)

Shavings—			
Hard White Envelope Cuttings, one cut	$3.37½	@	—
No. 1 Hard White Shavings	3.12½	"	—
No. 1 Soft White, one cut.....	2.50	"	—
White Blank News	—	"	—
No. 1 Mixed Shavings	—	"	—
Solid Ledger Stock..	—	"	—
No. 1 White Ledger.	2.17½	"	—
No. 1 Mixed or Colored Ledger.....	1.87½	"	—
No. 1 Books, heavy.	*1.57½	"	—
Overissue Magazine.	*1.67½	"	—
New Manila Envelope Cuttings	2.87½	"	—
Container Manila....	—	"	—
No. 1 Assorted Kraft Cuttings (old)....	—	"	—
Kraft Paper.....	1.75	"	—
No. 1 Mixed Paper..	*.65	"	—
Super-mixed Paper..	*.70	"	—
Box Board Cuttings.	*.72½	"	—
Corrugated Containers (old).....	.82½	"	—
New Corrugated Cuttings	.90	"	—
Overissue News....	.85	"	—
No. 1 Baled News..	—	"	—

* OPA Maximum Prices in effect October 1.

BOSTON

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White.	*3.12½	@	—
No. 1 Soft White.	*2.50	"	—
No. 2 Mixed.....	.90	"	1.00
Solid Ledger Books.	—	"	—
Overissue Ledger Stock	—	"	—
White Ledger Stocks	*2.17½	"	—
Mixed Ledgers.....	*1.87½	"	—
No. 1 Heavy Books..	*1.57½	"	—
No. 1 Books, Light..	—	"	—
Combined Stitchless—			
Book Stock.....	*2.87*	"	—
Manila Env. Cuttings	*2.65	"	—
Manila Envelope Cuttings, one cut.....	*2.70	"	—
White Blank News..	*1.65	"	—
No. 1 Kraft.....	—	"	—
Extra No. 1 Kraft...	—	"	—
Mixed Papers.....	*.65	"	—
Super Mixed Papers.	.70	"	—
Print Manila	—	"	—
Container Manila....	—	"	—
Old Newspapers.....	—	"	—
Paper Wool Strings.	1.30	"	1.35
Overissue News.....	*.85	"	—
Box Board Chips....	.35	"	—
Corrugated boxes....	*.72½	"	—
Kraft corrugated boxes	*.90	"	—
New Kraft Corrugated Cuttings....	—	"	—
Screening Wrappers.	.90	"	1.00

* OPA Maximum Prices in Effect October 1.

Bagging
(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	4.75	@	5.00
Sisal Rope.....	3.50	"	4.00
Mixed Rope.....	1.00	"	1.25

CHICAGO

Waste Paper
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings, one cut	3.37½	"	—
No. 1 Hard White	*3.12½	"	—
No. 1 Soft White.	*2.50	"	—
No. 1 White Ledger	*2.17½	"	—
Solid Books.....	—	"	—
White Blank News.	*1.65	"	—
Krafts	—	"	—
New Kraft Cuts....	*2.65	"	—
Overissue News....	*.85	"	—
Old Newspapers—			
No. 1 Folded News	*.75	"	—
No. 1 Mixed Paper	*.65	"	—

* OPA Maximum Prices in Effect October 1.

Roofing Stocks—			
No. 1.....	1.85	@	—
No. 2.....	1.75	"	—

To Hold Chemical Show Earlier

"With the 1942 Thanksgiving date back in its original place by a decree of the President, the dates of the 1942 National Chemical Exposition and the National Industrial Chemical Conference have been changed to November 17 to 22 inclusive at the Stevens Hotel, Chicago", says Victor Conquest, chairman of the Exposition Committee of the Chicago Section of the American Chemical Society.

Mr. Conquest believes the earlier date will permit greater use of the automobile as transportation, and will result in an even greater attendance than the record set in 1940.

Several scientific societies are planning to hold their conventions and meetings in Chicago during this same week to make use of the advantage the exposition offers in securing a larger attendance. The Exposition Committee is offering its services to other scientific groups who may wish assistance in arranging for convention facilities during that week in Chicago.

Associated with Mr. Conquest on the Exposition Committee are the following: W. M. Hinman, superintendent of the Sensitizing Department, Frederick Post Company; L. E. May, superintendent, Chemical Products, Sherwin-Williams Company; R. C. Newton, vice president, Swift & Co.; W. C. Johnson, associate professor of Chemistry, University of Chicago; A. Guillaudeu, research chemist, Swift & Co.; H. E. Robinson, assistant chief chemist, Swift & Co.; and G. L. Parkhurst, senior patent attorney, Standard Oil Company.